

# KV-X2140B/X2540B/X2940B

## RM-816

## SERVICE MANUAL

*French Model*

KV-X2140B

Chassis No. SCC- F08P-A

KV-X2540B

Chassis No. SCC- F08Q-A

KV-X2940B

Chassis No. SCC- F08N-A



## AE-1C CHASSIS

MODELS OF THE SAME SERIES	
KV-M2530B	KV-X2150/X2151B
KV-M2520B	KV-A2910B/A2911B
KV-A2110B/A2510B	KV-C2120B/C2121B

### [KX-X2140B/X2540B/X2940B]

### SPECIFICATIONS

Television system. B/G/H, L, I  
Colour system. PAL/SECAM, NTSC3.58, NTSC4.43  
Stereo system. GERMAN stereo.  
Channel coverage. VHF: E2-E12 UHF: E21-E69  
CABLE TV (1) : S1-S41  
CABLE TV (2) : S01-S05, M1-M10,  
U1-U10.  
VHF : F02-F10 UHF : F21-F69  
CABLE : B-Q  
VHF : A-I UHF : B21-B69  
Picture tube. Hi-Black Trinitron tube  
Approx. 55 cm [21 inch]  
(Approx. 51 cm picture measured  
diagonally)  
100°-degree deflection  
Approx. 63 cm [25 inch]  
(Approx. 59 cm picture measured  
diagonally)  
110°-degree deflection  
Approx. 72 cm [29 inch]  
(Approx. 68 cm picture measured  
diagonally)  
110°-degree deflection  
Rear Input/Output  
Sockets : 1/21-pin Euroconnector:  
(CENELEC standard) inputs for Audio/  
Video signals and RGB.  
Outputs for Audio and Video signals.  
2/ 21-pin Euro connector: inputs  
Audio / Video signals and S-Video.

Front Input/Output  
Sockets. Audio output (variable) - phono jacks  
Video input - phono jack.  
Audio inputs - (L,R) phono jacks.  
S-Video input - 4pin DIN.  
Headphone jack output : stereo mini jack.  
Sound output. 15W+15W (Music)  
Power consumption. 87Wh (KV-X2140B)  
101Wh (KV-X2540B)  
109Wh (KV-X2940B)  
Dimensions. Approx. 513 x 438 x 474mm (w/h/d) 21inch  
Approx. 575 x 489 x 480mm (w/h/d) 25inch  
Approx. 656 x 554 x 512mm (w/h/d) 29inch  
Weight. Approx. 25.5kg 21inch  
Approx. 35kg 25 inch  
Approx. 52kg 29inch  
Supplied accessories. RM-816 Remote Commander (1)  
IEC designation R6 batteries (2)

### [RM-816]

Remote control system infrared control  
Power requirements. 3V dc  
2 batteries IEC designation  
R6 (size AA)  
Dimensions. Approx. 75 x 221 x 23mm (w/h/d)  
Weight. Approx. 230g (including batteries).

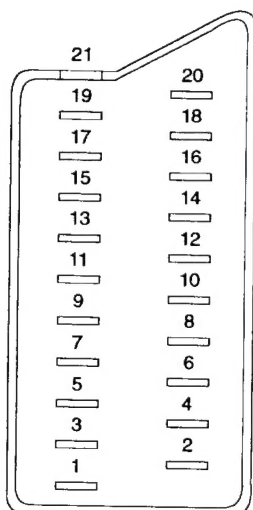
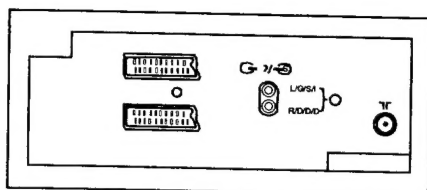
Design and specifications are subject to change without notice.



# TRINITRON® COLOR TV

# SONY®

## 21 - pin Euro Connector Configuration



21 pin connector ( 1. 2.)

Pin No	1	2	Signal	Signal level
1	○	○	Audio output B (right)	Standard level : 0.5Vrms Output impedance : less than 1Kohm. *
2	○	○	Audio inout B (right)	Standard level : 0.5Vrms Input impedance : More than 10Kohm. *
3	○	○	Audio output A (left)	Standard level : 0.5Vrms Output impedance : less than 1Kohm. *
4	○	○	Ground (audio)	
5	○	○	Ground (blue)	
6	○	○	Audio input A (left)	Standard level : 0.5Vrms Input impedance : more than 10Kohms. *
7	○	●	Blue input	0.7V +/- 3dB 75ohms positive
8	○	○	Function select (AV control)	High state (9.5 - 12 V) : Part mode Low state (0 - 2 V) : TV mode Input impedance : more than 10Kohms Input capacitance : Less than 2nF
9	○	○	Ground (green)	
10	○	○	Open	
11	○	●	Green	Green signal : 0.7V +/- 3dB 75ohms, positive
12	○	○	Open	
13	○	○	Ground (red)	
14			Ground (blanking)	
	○	—	Red input	0.7V +/- 3dB. 75ohms. positive
	—	○	(S signal) chroma input	0.3V +/- 3dB. 75ohms. positive
15	○	○	Blanking input (Y's signal)	High state (1 - 3 V) Low state (0 - 0.4 V) Input impedance : 75ohms
16	○	●		
17	○	○	Ground (video output)	
18	○	○	Ground (video input)	
19	○	○	Video output	1V +/- 3dB. 75ohms. positive Sync : 0.3V (-3. +10dB)
	○	—	Video input	1V +/- 3dB. 75ohms. positive Sync : 0.3V (-3. +10dB)
	—	○	Video Input /Y (S signal)	1V +/- 3dB. 75ohms. positive Sync : 0.3V (-3. +10dB)
20				
21	○	○	Common ground ( plug shield )	

○ connected

● unconnected (open)

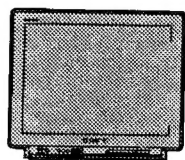
\* at 20Hz - 20kHz

## 4 pin connector [ ]


Pin No	Signal	Signal level
1	Ground	
2	Ground	
3	Y ( S signal ) input	1V ± 3db 75ohm, positive Sync 0.3V
4	C ( S signal ) input	0.3V ± 3db 75ohm positive

## 1-1. Switching on/off

After you have completed the basic preparation your TV is ready to be connected to the mains power supply (220/240V AC, 50Hz).

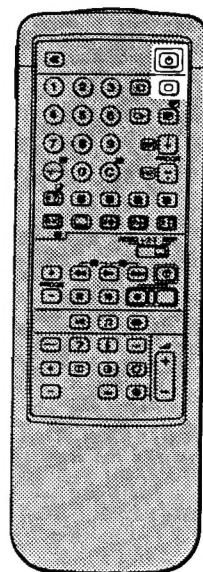


### How to turn the TV on

Action	Result
Press ① on the TV. 	The TV will turn on. <b>Note:</b> If the screen remains blank, the TV may be in the standby mode. Press ① to switch it on.

### How to turn the TV off

A Temporarily	
Press ② to enter standby mode.	The TV will be in standby. To return to the TV mode press ①
B Completely	
Press ③ on the TV.	The TV will turn off.



## 1-2. Presetting

After you have installed this TV you need to preset TV channels.

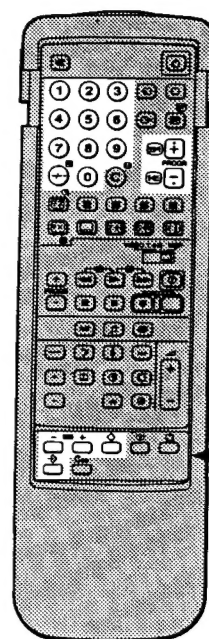
TV stations broadcast their channels at certain frequencies. You must preset these channels to programme numbers on this TV before you can watch the TV programmes.

There are 60 spaces for storing these channels.


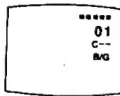

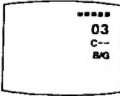

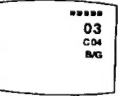

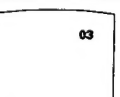
Slide open the full function side of the remote commander to reveal preset buttons.

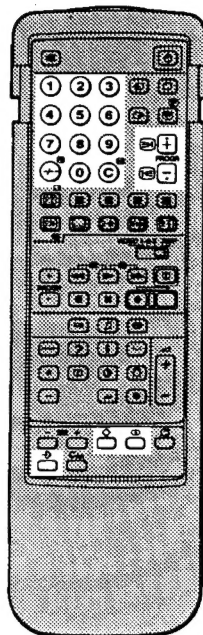
### How to preset channels automatically

If you are unfamiliar with the channel numbers of the stations you wish to preset, use "How to preset channels automatically". If you are familiar with the channel numbers refer to "How to preset T.V. channels directly".



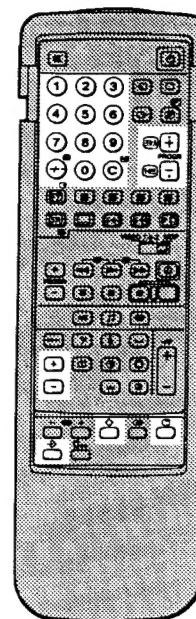
**Note:** These buttons should be used in preset mode only.

Action	Result
<b>1</b> Press ④ to enter the preset mode. 	 The programme number will start flashing.
<b>2</b> Press PROG + or - or the number buttons to select the programme number to which you want to preset channels.  <b>Note</b> To select a double-digit number, use the -/-- button. For example, if you want to choose 23, press -/--, 2, and then 3.	 The programme number changes
<b>3</b> Press ⑤ + or - once to search forward or backward for channels. 	 When a channel is tuned in, the search will stop. <b>Note</b> If you want to skip a channel, press ⑤ + or ⑤ -.
<b>4</b> Press ⑥ if you want to store the channel which is tuned in. Press ④ to exit preset mode without storing. 	 The channel is now stored and you have returned to TV mode.
<b>5</b> Repeat steps 1 to 4 to store the other channels.	



### How to preset channels directly

Action	Result
<b>1</b> Press $\diamond$ to enter the preset mode. 	The programme number will start flashing.
<b>2</b> Press PROGR +/- or the number buttons to select the programme number on which you want to preset a channel.  <b>Note</b> To select a double-digit number, use the +/- button. For example, if you want to choose 23, press +/-, 2, and then 3.	The programme number changes.
<b>3</b> Press C. If you want to select a cable channel, press C twice. 	The indication "C--" ("S--" for a cable channel) starts flashing on the display.
<b>4</b> Select the channel number with two digits (e.g. 04) by pressing the number buttons.  <b>Note</b> Press the second number within 5 seconds after the first one, otherwise the operation will be cancelled.	The channel number changes. <b>Note</b> If you have made a mistake the letter "X" will appear. Repeat step 4 again.
<b>5</b> Press $\diamond$ to store the channel which is tuned in. Press $\diamond$ to exit the preset mode without storing. 	The channel is now stored and you have returned to TV mode.
Repeat steps 1 to 5 to store the other channels.	



### How to Name a Station

You can use up to five characters to "name" a channel or station (i.e. BBC1).

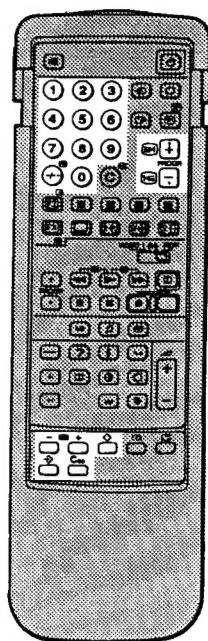
Action	Result
<b>1</b> Select a programme number you want to name by pressing the PROGR +/- or the number buttons 	The selected programme number will appear.
<b>2</b> Press $\diamond$ . 	The programme number starts flashing.
<b>3</b> Press $\square$ . 	The first column of the station name indication will start flashing.
<b>4</b> Press + or - to select a letter in the alphabet, a number, or a blank space. 	The letters of the alphabet, numbers and the space (" ") will appear sequentially.
<b>5</b> Press $\square$ . 	The first character is now set and the second column will start flashing.
<b>6</b> Repeat steps 4 and 5 to set each letter.	
<b>7</b> Press $\diamond$ . 	The channel is now stored and you have returned to TV mode.

### How to tune in a channel temporarily

You can tune a channel in temporarily, if it has not been preset.

Action	Result
<b>1</b> Press C. For cable channels, press C twice.	The indication "C" ("S" for cable channels) appears on the screen.
<b>2</b> Select the channel number with two digits by pressing the number buttons (e.g. for channel 4, first press 0, then 4.)	The channel is received, but it is not stored to any programme number.





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### How to Skip Programmes

Using the PROGR +/- buttons you can skip unused programme channel numbers. However, the skipped numbers may still be called up using the number buttons.

Action	Result
<b>1</b> Press $\rightarrow$ to enter the preset mode. 	The programme number will start flashing.
<b>2</b> Select the programme number that you want to skip by pressing PROGR +/- or the number buttons. 	The programme number changes.
<b>3</b> Press Coo. 	The lowest channel number appears under the programme number.
<b>4</b> Press $\diamond$ . 	The channel is now stored and you have returned to TV mode.
Repeat steps 1 to 4 to skip other programme numbers.	

### How to Fine Tune Manually

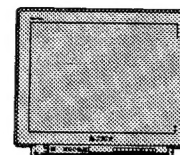
If the picture is distorted, you can fine tune the channel manually.

Action	Result
Press $\leftarrow$ + or - repeatedly until the picture looks normal.	The indication $\leftarrow F \rightarrow$ appears on the screen.
Press $\rightarrow$ to enter the preset mode.	The programme number starts flashing.
Press $\diamond$ .	The fine tuning is stored.

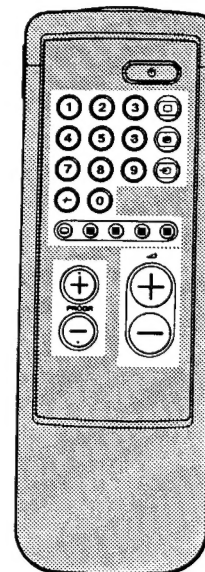
**Note:** The automatic fine tuning will function again when you preset the channel once more.

## 1-3. Basic TV operation

**Note:** Press  $\perp$  on door to open.



P-4  $\rightarrow$   $\rightarrow$  + / -



This section introduces you to the basic control functions which are available on the simple side of the remote commander.

### How to Select Programmes

Before you can select programmes make sure that you have preset channels, refer to page 29.

Action	Result
Press PROGR +/- or the number buttons. To select a double-digit number, use the -/-- button. For example, if you want to choose 23, press -/--, 2, and then 3.	The selected programme is displayed.

### How to Adjust the Volume

Action	Result
Press $\Delta$ + or -.	The volume markers will appear.

### How to Use Additional Functions

#### How to operate with the buttons on the TV

You can also select programmes and adjust the volume using the  $\rightarrow$   $\Delta$   $\rightarrow$  and  $\rightarrow$   $\leftarrow$  buttons on the front of the TV. For operation, first press the  $\rightarrow$   $\Delta$   $\rightarrow$  button repeatedly so that the P (for programme) or  $\Delta$  (for volume) indication appears on the screen, and then adjust with the  $\rightarrow$   $\leftarrow$  +/- buttons.

#### How to view the teletext

Press  $\square$ . To return to the TV mode, press  $\square$ . For details about the teletext operation, refer to page 33.

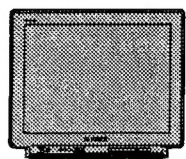
#### How to view the video input picture

Press  $\square$ . To return to the TV mode, press  $\square$ . For further details, refer to page 36.

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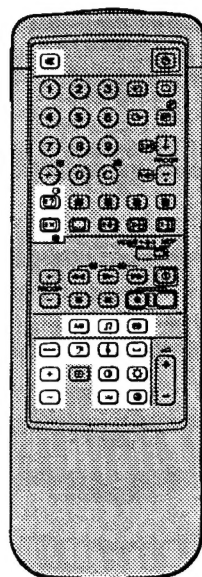
## 1-4. Advanced TV operation

This section shows you how to use convenient features and how to adjust the picture and sound to your taste. Use the full-function side of the Remote Commander.



+ / -  
[ ]

A-CD-B



### How to use on-screen display and special sound features

You can enjoy the following convenient features.

How to	Action	To resume normal picture/sound
Display on-screen indications	Press [C].	Indications disappear after some seconds
Display programme numbers	Press [C] twice	Press [C] twice again.
Mute the sound	Press [M].	Press [M] again.
Select a language in bilingual programmes.	Press A/B. The selected mode of the A-CD-B indicator on the TV lights up.	Press A/B.
Set the sound to music listening position	Press [J].	Press [J] again.
Use the space sound (special acoustic effect)	Press [S].	Press [S] again.
Request the time	Press [T].	Press [T] again.

### How to adjust the picture and sound

Although the picture and sound have been adjusted at the factory, you might want to adjust them to your own taste. To do this, please follow the steps.

For picture adjustment

To Adjust:	Press:	Then:	Result: (- ↔ +)
<b>Picture:</b>			
Colour Intensity	[C]	[+] / [-]	Less ↔ More
Picture Contrast	[C]		Less ↔ More
Brightness	[C]		Dark ↔ Light
Hue (for NTSC only)	[H]		Greenish ↔ Redish
<b>Sound:</b>			
Bass	[B]	[+] / [-]	Less ↔ More
Treble	[T]		Less ↔ More
Balance	[B]		More Left/More Right

To reset the picture and sound to factory set levels press [R].

On the set:

Press [R] + / - buttons simultaneously.

## 1-5. Optional connections/operations

### How to view the video input picture

You can view the picture of video equipment connected to the input terminals by selecting the input mode.

#### Operation

Action	Result
Press [I] repeatedly to select the desired input.	<div style="display: flex; align-items: center;"> <div style="border: 1px solid black; padding: 5px; margin-right: 10px;">[I] 1</div> <div>Symbol for the selected input appears. (See the table below.)</div> </div>
To return to the TV mode, press the [T] button.	

#### Input modes

Symbol	Result
[I] 1	Audio/video input through the [I] 1 connector.
[I] 2	RGB input through the [I] 2 connector.
[I] 2	Audio/video input through the [I] 2/[I] 2 connector.
[I] 2	S video input (from a VTR equipped with an S video output) through the [I] 2/[I] 2 connector.
[I] 3	Audio/video input through [I] 3 and [I] 3 jacks on the front.

You can also select the input mode using the P [I] 1/[I] 2/[I] 3 button on the TV. In this case, first select [I] and then press + / - buttons to select the input.

### How to select the Output

The [I] 2/[I] 2 connector outputs four kinds of audio/video signals. You have to select one of them as follows.

#### Operation

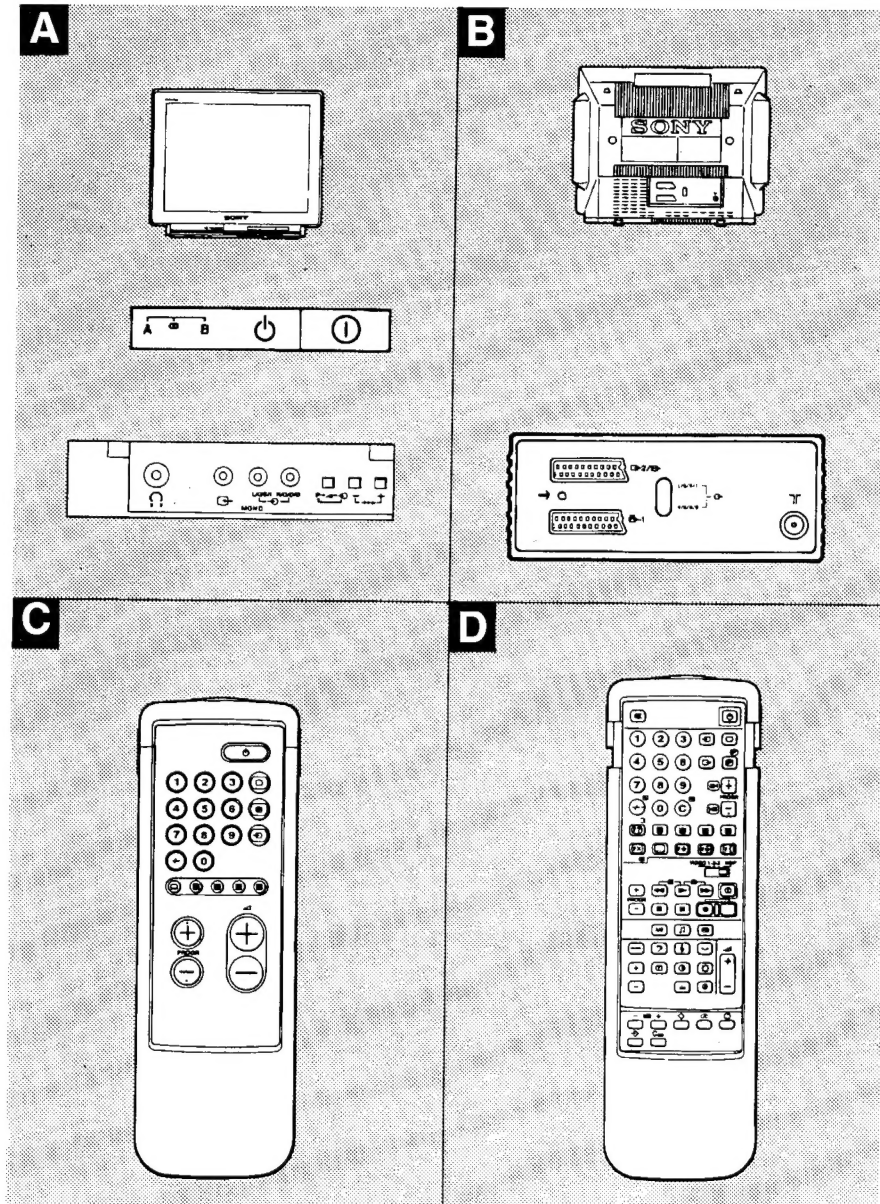
Action	Result
Press [O] repeatedly to select the desired input.	<div style="display: flex; align-items: center;"> <div style="border: 1px solid black; padding: 5px; margin-right: 10px;">[O] 1</div> <div>Symbol for the selected output appears. (See the table below.)</div> </div>

#### Output modes

Symbol	Output from
1 [O]	The audio/video signal from the [I] 1 connector
2 [O]	The audio/video signal from the [I] 2/[I] 2 connector
3 [O]	The audio/video signal from the [I] 3/[I] 3 connectors.
TV [O]	The audio/video signal from the [I] aerial terminal.

## 1-6. Additional information

### Parts Identification



This section briefly describes the buttons and controls on the TV set and on the Remote Commander. For more information, refer to the pages given next to each description.

A TV set – Front		
Sign	Name	Refer to page
ⓘ	Main power switch	
⏻	Standby Indicator	
A-ⓐ-B	Bilingual A/B Indicators	
🎧	Headphones jack (stereo minijack)	
📺	Input jacks (video /video/audio)	
📺	Function selector (Programme/ volume/Input)	
➡ / ⬅	Adjustment buttons for function selector	












C TV set – Rear		
Sign	Name	Refer to page
📺	21-pin Euro-AV connector (S-video/video input, TV/video output)	
📺	21-pin Euro-AV connector (RGB/video input, TV output)	
📻	Audio output jacks (phono jacks)	
📡	Aerial terminal (IEC type)	

D Remote Commander – simple side		
Sign	Name	Refer to page
📺	Input mode selector	
📺	Teletext button	
📺	TV mode selector	
⏻	Standby button	
1,2,3,4,5, 6,7,8,9, and 0	Number buttons	
-/--	Double-digit entering button	
📺 +/-	Volume control button	
PROG +/-	Programme selector	

B Remote Commander – full function side		
Sign	Name	Refer to page
📺	Mute on/off button	
⏻	Standby button	
1,2,3,4,5, 6,7,8,9, and 0	Number buttons	
📺	Input mode selector	
📺	TV power on/TV mode selector button	
📺	Output mode selector	
📺	Teletext button	
📺	Music button	
A/B	Language selector in bilingual programme	
-/--	Double-digit entering button	
C	Direct channel entering button	
📺	Space sound button	
📺	Request time display	
📺	Teletext operation buttons	
📺	Top text buttons	
📺	On-screen display button	
➡ / ⬅	Picture and sound adjustment reset button	
📺 +/-	Volume control	
PROG +/-	Programme selector	
📺	Picture and sound controls	
VIDEO 1/2/3, MDP	Video equipment selector	
📺	Video equipment operation buttons	
📺	Programme number clear button	
📺	Channel preset button	
- 📺 +	Tuning buttons	
📺	Channel store button	
📺	Station label button	

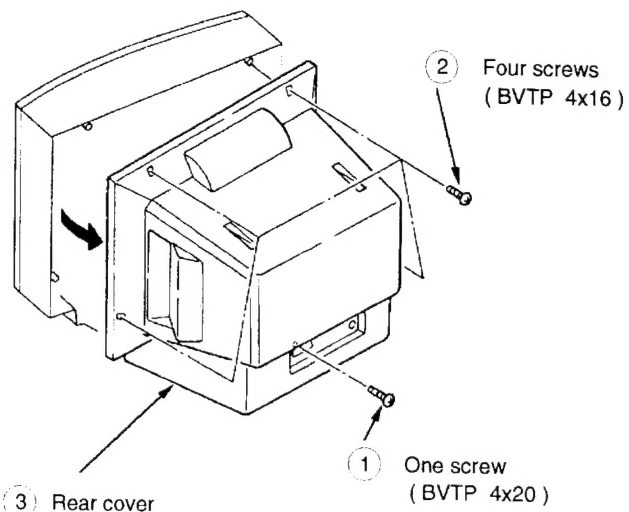
## 1-7. Troubleshooting

Here are some simple solutions to the problems which affect the picture and sound.

Problem	Solution
No picture (screen is dark), no sound	<ul style="list-style-type: none"><li>• Plug the TV in.</li><li>• Press  on the TV. (If  indicator is on, press  or the programme number on the Remote Commander.)</li><li>• Check the aerial connection.</li><li>• Check if the selected video source is on.</li><li>• Turn the TV off for 3 or 4 seconds and then turn it on again using .</li></ul>
Poor or no picture (screen is dark), but sound good	<ul style="list-style-type: none"><li>• Adjust the picture with , , , and + buttons.</li></ul>
Good picture but no sound	<ul style="list-style-type: none"><li>• Press  +.</li><li>• Disconnect the headphones.</li><li>• If  is displayed on the screen, press .</li></ul>
No colour for colour programmes	<ul style="list-style-type: none"><li>• Press  on the Remote Commander.</li></ul>
If you continue to have these problems, have your TV serviced by qualified personnel. Never open the casing yourself.	

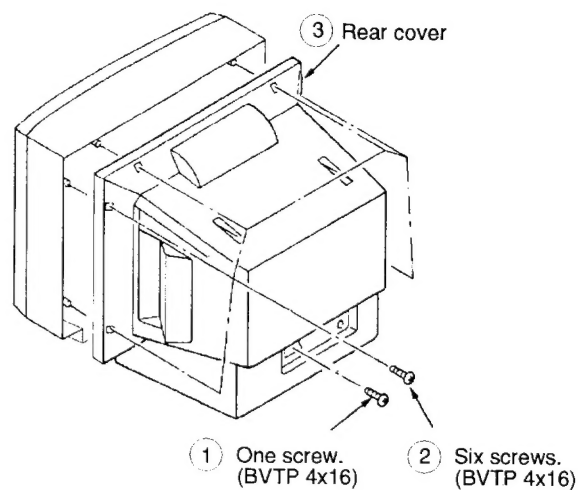
## SECTION 2 DISASSEMBLY

### 2-1-1. REAR COVER REMOVAL (21 inch, 25 inch)

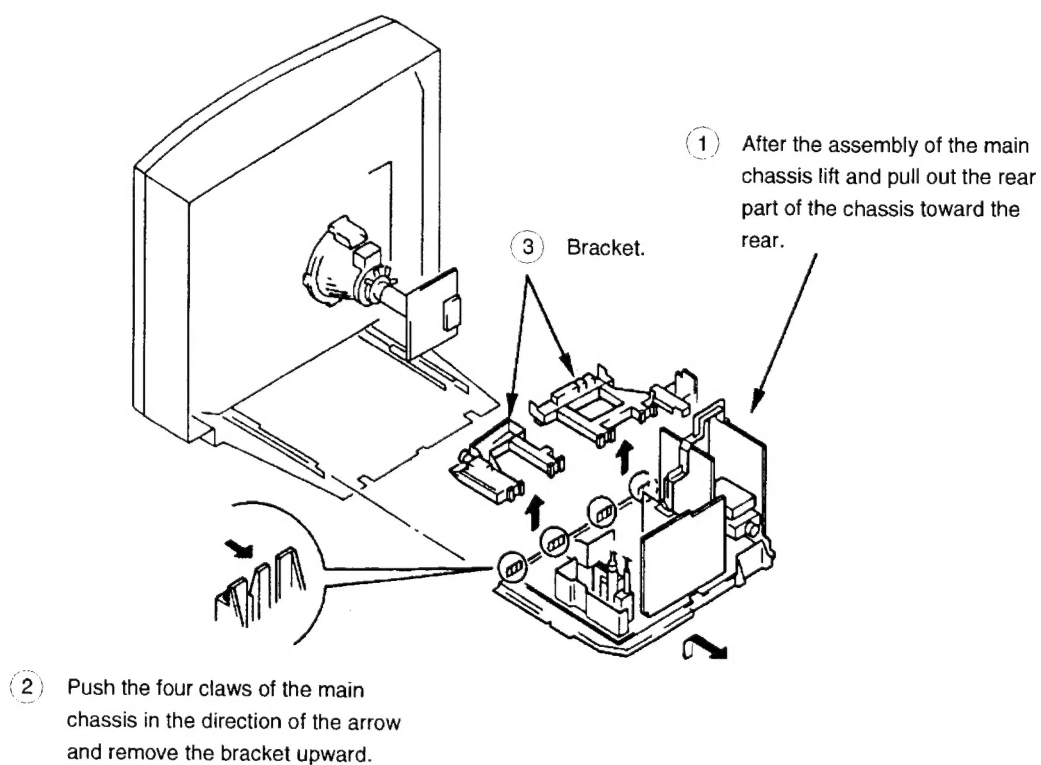


- 1) Pull the rear cover and turn the right speaker leads fixed by the pathlock on the chassis.
- 2) When attaching the rear cover for the speaker leads by pathlock.

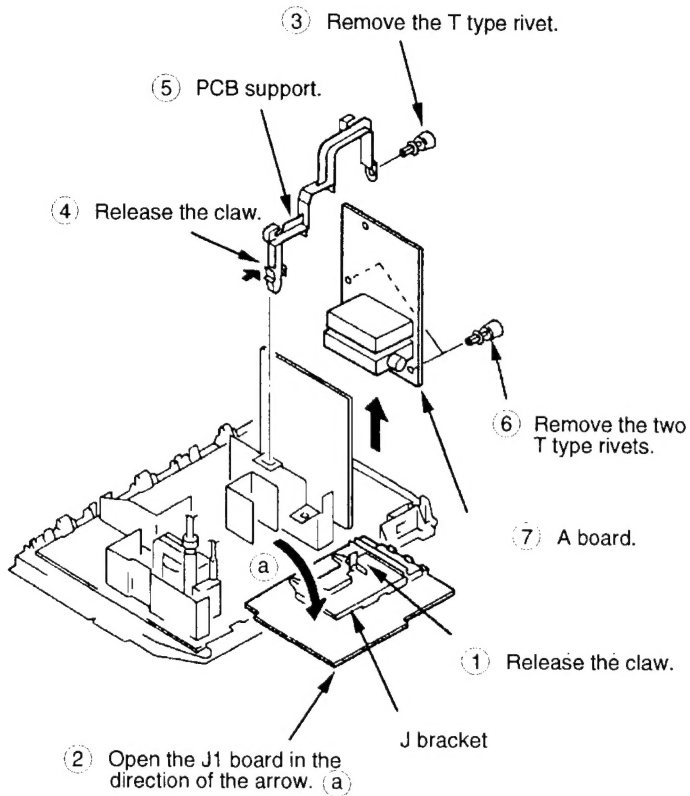
### 2-1-2. REAR COVER REMOVAL (29 inch)



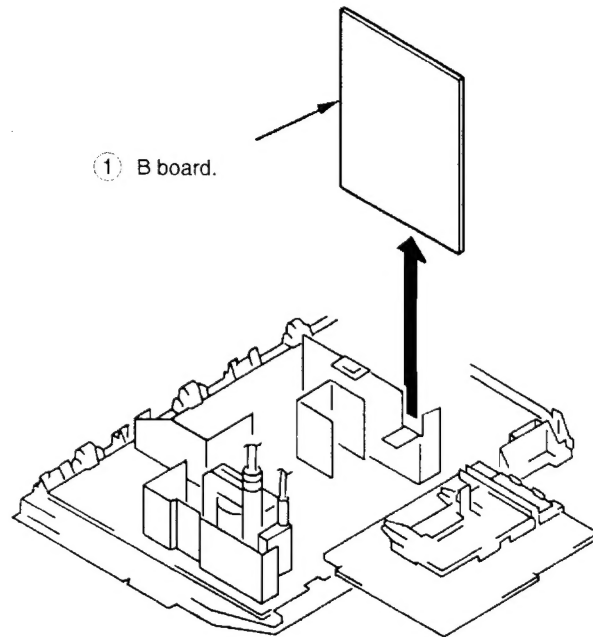
### 2-2. CHASSIS ASSEMBLY REMOVAL



## 2-3. A AND J1 BOARD REMOVAL



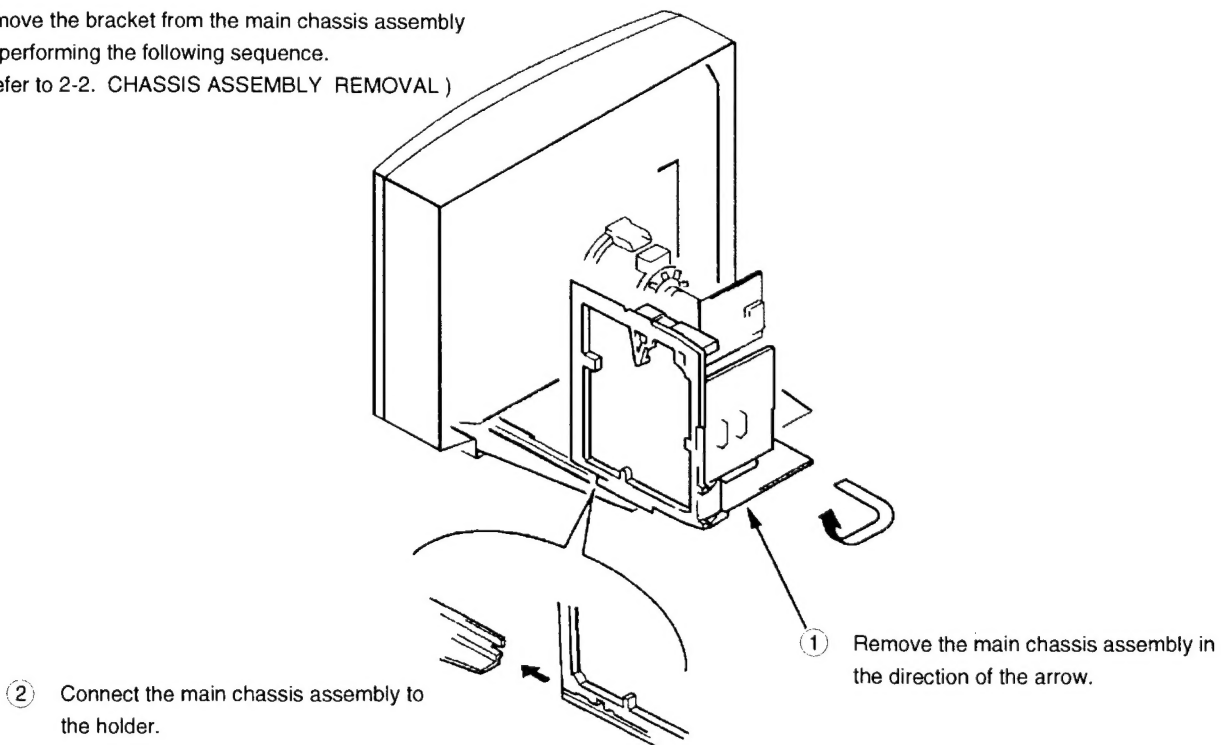
## 2-4. B BOARD REMOVAL



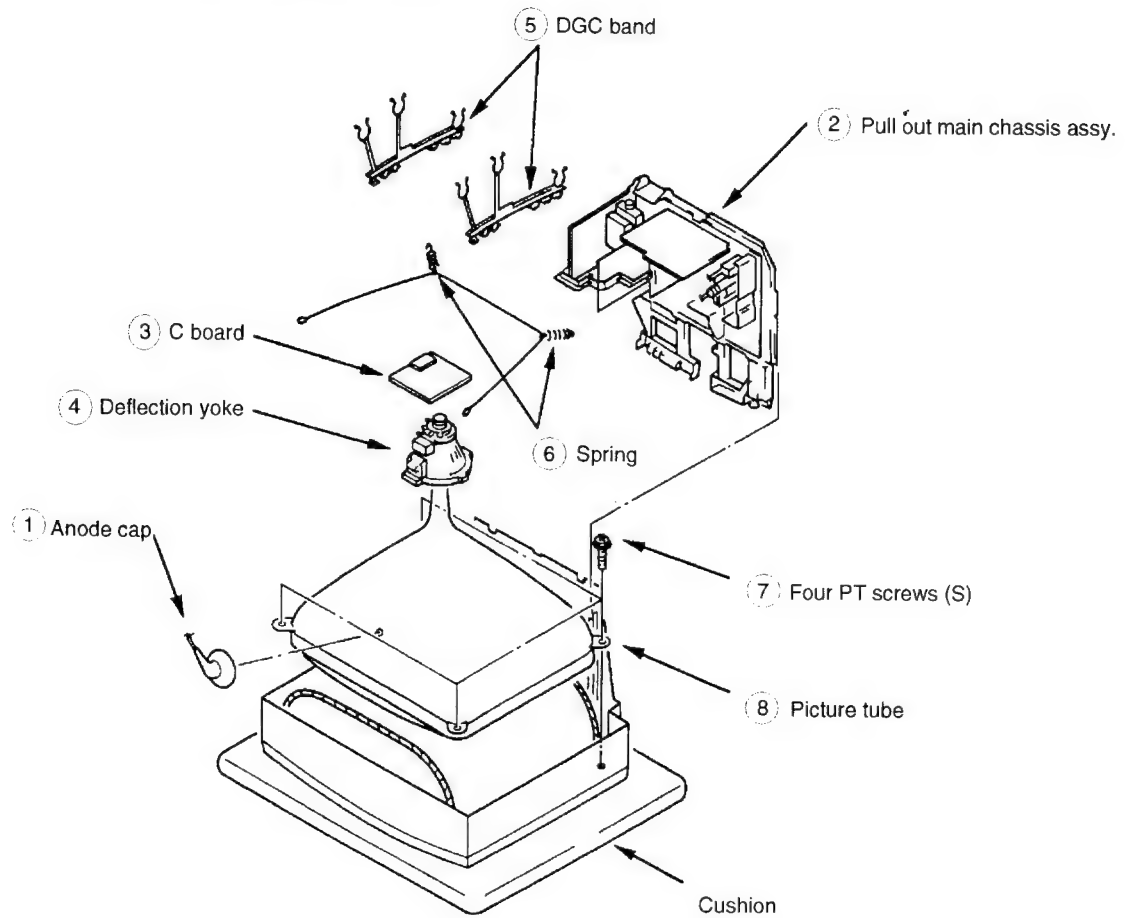
Note : 10 pin extension cable ( S-0945-001-0)

## 2-5. SERVICE POSITION

- ※ Remove the bracket from the main chassis assembly by performing the following sequence.  
( Refer to 2-2. CHASSIS ASSEMBLY REMOVAL )



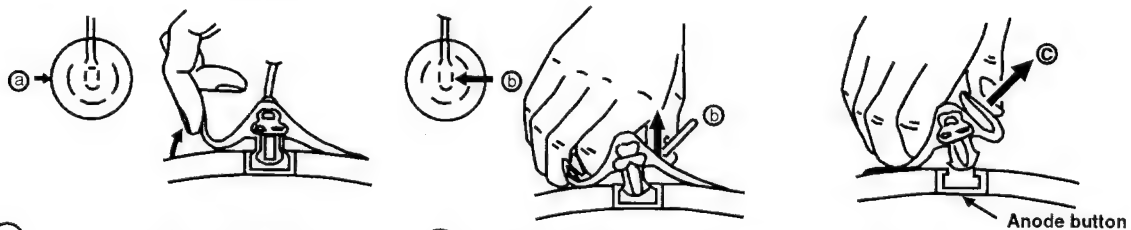
## 2-6-1. PICTURE TUBE REMOVAL (21 inch)



### • REMOVAL OF ANODE-CAP

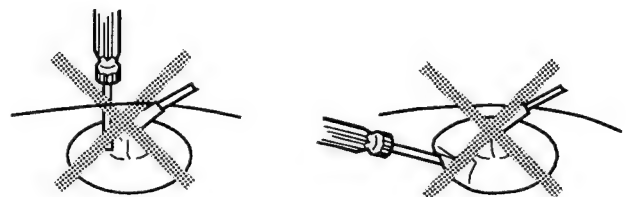
**Note:** Short circuit the anode of the picture tube and the anode cap to the metal chassis, CRT shield or carbon paint on the CRT, after removing the anode.

#### \* REMOVING PROCEDURES.



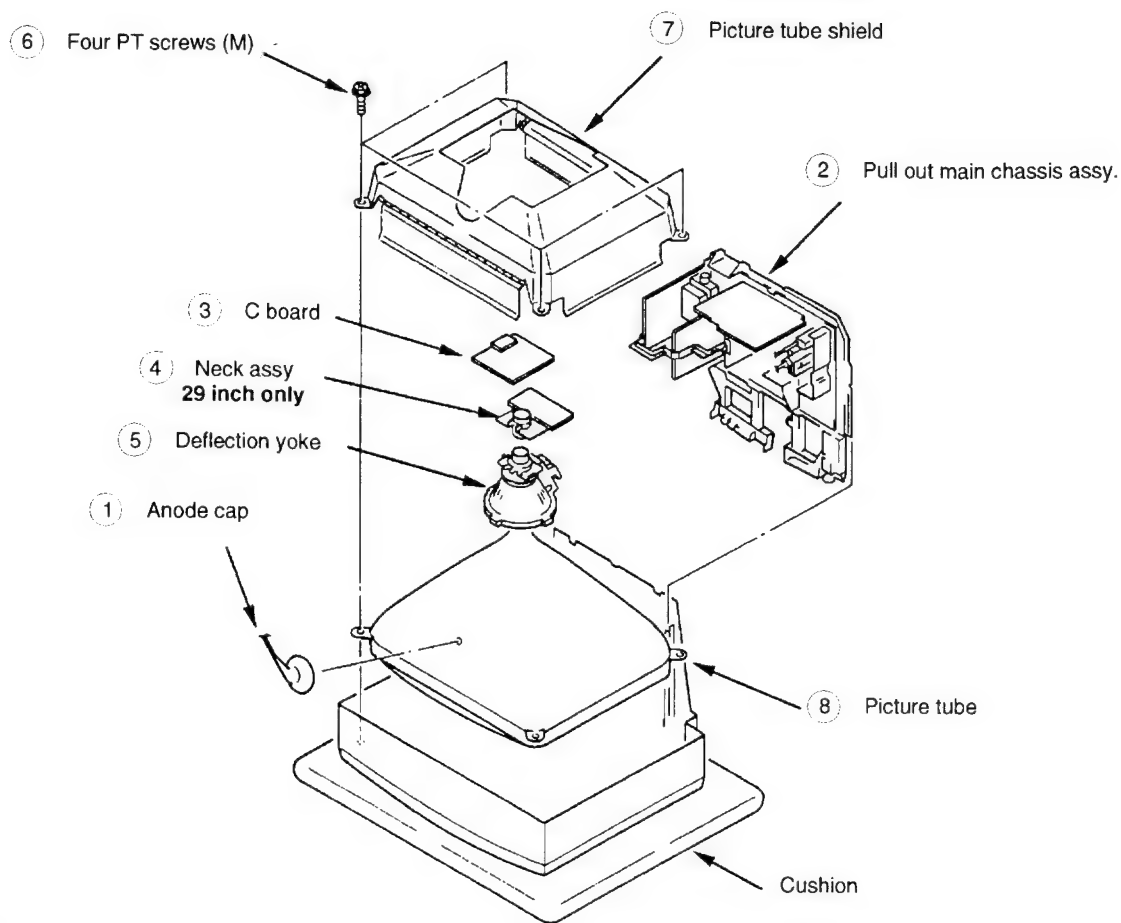
#### • HOW TO HANDLE AN ANODE-CAP

- ① Don't damage the surface of anode-cap with sharp shaped material !
- ② Don't press the rubber hardly not to hurt inside of anode-caps !  
A metal fitting called as shatter-hook terminal is built in the rubber.
- ③ Don't turn the foot of rubber over hardly !  
The shatter-hook terminal will stick out or hurt the rubber.





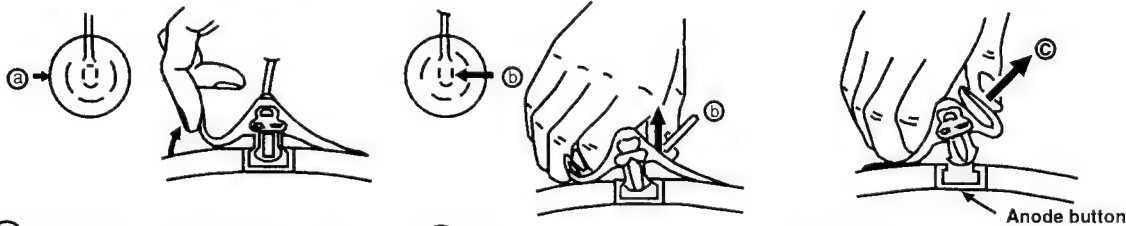
## 2-6-2. PICTURE TUBE REMOVAL (25 inch, 29 inch)



### • REMOVAL OF ANODE-CAP

**Note:** Short circuit the anode of the picture tube and the anode cap to the metal chassis, CRT shield or carbon paint on the CRT, after removing the anode.

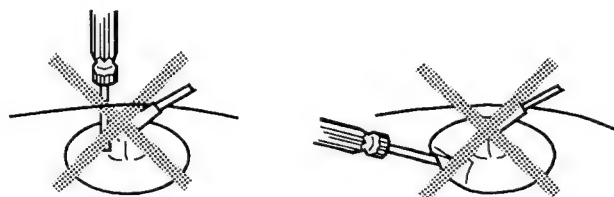
#### \* REMOVING PROCEDURES.



- ① Turn up one side of the rubber cap in the direction indicated by the arrow (a)
- ② Using a thumb pull up the rubber cap firmly in the direction indicated by the arrow (b)
- ③ When one side of the rubber cap is separated from the anode button, the anode-cap can be removed by turning up the rubber cap and pulling it up in the direction of the arrow (c)

#### • HOW TO HANDLE AN ANODE-CAP

- ① Don't damage the surface of anode-cap with sharp shaped material. !
- ② Don't press the rubber hardly not to damage the inside of anode-cap. !  
A metal fitting called as shatter-hook terminal is built in the rubber.
- ③ Don't turn the foot of rubber over hardly !  
The shatter-hook terminal will stick out or damage the rubber.



## SECTION 3

### SET-UP ADJUSTMENTS

- When complete readjustment is necessary or a new picture tube is installed, carry out the following adjustments.
- Unless there is specific instruction to the contrary, carry out these adjustments with the rated power supply.
- Unless there is specific instruction to the contrary, set the controls and switches this way :

● Contrast ..... 80%  
(or remote control normal)  
✱ Brightness ..... 50%

- Carry out the following adjustments in this order:
  1. Beam landing
  2. Convergence
  3. Focus
  4. White balance

Note: Testing equipment required

1. Color bar/pattern generator
2. Degausser
3. DC power supply
4. Digital multimeter
5. Oscilloscope

#### Preparation: ( 21 inch, 25 inch )

- In order to reduce the influence of geomagnetism on the set's picture tube face it east or west.
- Switch on the set's power and degauss with the degausser.

#### 3-1. BEAM LANDING

1. Input the white signal with the pattern generator.  
 Contrast } normal  
 Brightness }
2. Position neck ass'y as shown in Fig. 3-2.
3. Set the pattern generator raster signal to red.
4. Move the deflection yoke to the rear and adjust with the purity control so that the red is at the center and the blue and the green take up equally sized areas on each side.  
(see Fig. 3-1 through 3-3.)
5. Move the deflection yoke forward and adjust so that entire screen is red. (See Fig. 3-1.)
6. Switch the raster signal to blue, then to green and verify the condition.
7. When the position of the deflection yoke has been decided, fasten the deflection yoke with the screws.
8. If the beam does not land correctly in all the corners, use a magnet to adjust it.  
(See Fig. 3-4.)

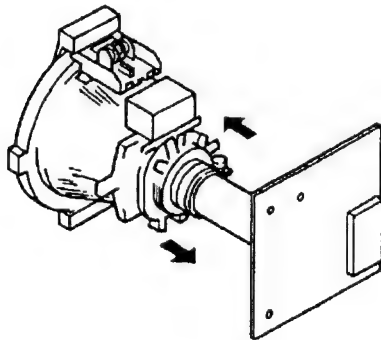


Fig. 3-1

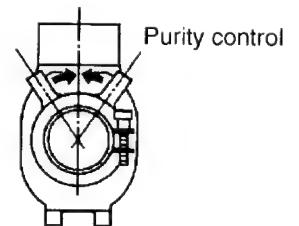


Fig. 3-2

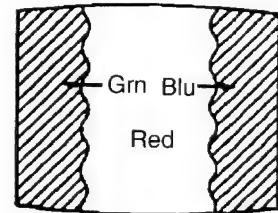


Fig. 3-3

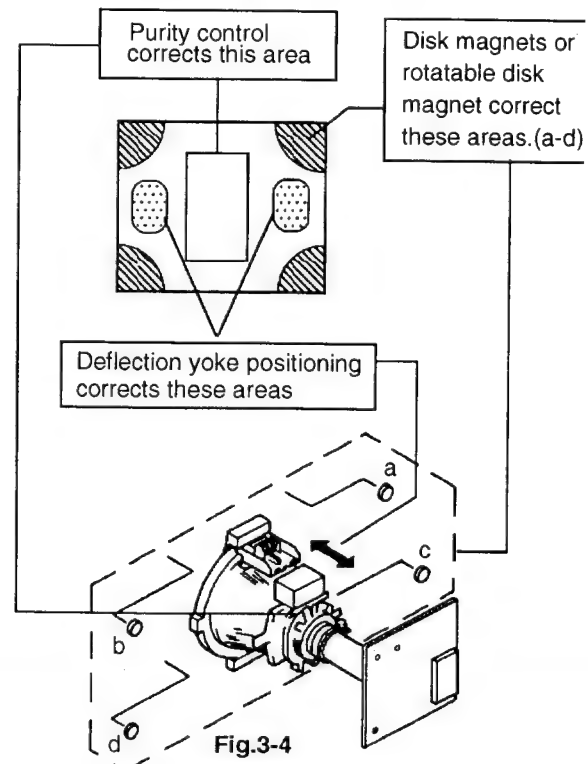


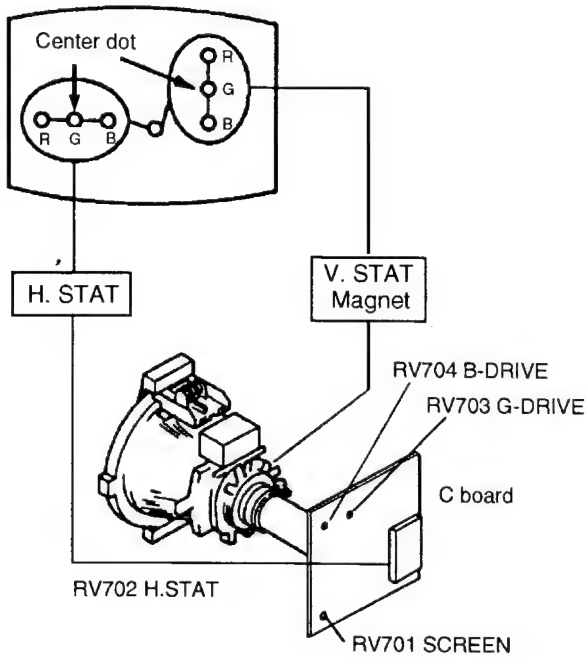
Fig. 3-4

## 3-2. CONVERGENCE

### Preparation:

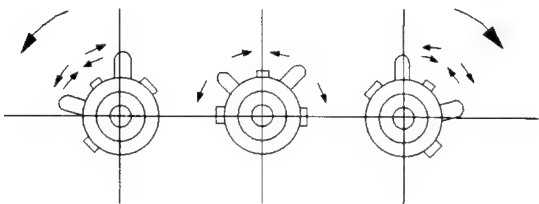
- Before starting, perform FOCUS, H.SIZE, and V.SIZE adjustments.
- Set BRIGHTNESS control to minimum.
- Feed in the dot pattern.

### (1) Horizontal and Vertical Static Convergence.

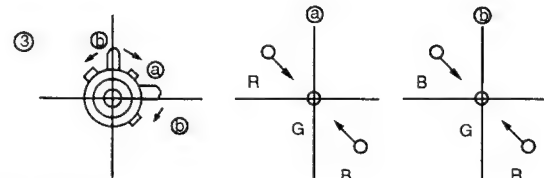
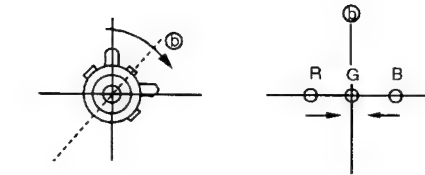
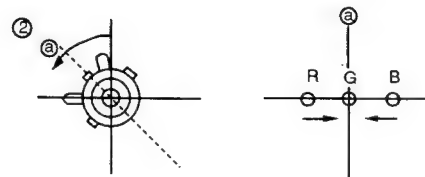
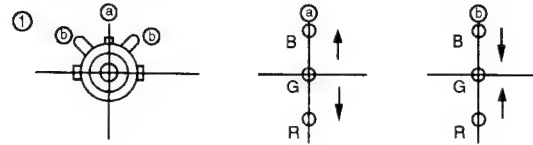


1. Adjust H.STAT VR to converge red, green, and blue dots at the center of the screen. (Horizontal movement)
2. Adjust V.STAT magnet to converge red, green, and blue dots at the center of the screen. (Vertical movement)
3. If the red, green and blue dots do not converge at the screen center with the H.STAT VR and V.STAT magnet as shown below. (In this case, HSTAT VR and V.STAT magnet effect each other.)

- Tilt the V.STAT magnet and adjust static convergence to open or close the V.STAT magnet.



4. If the V.STAT magnet is moved in the direction of the (a) and (b) arrows, the red, the green, and blue points move as shown below.



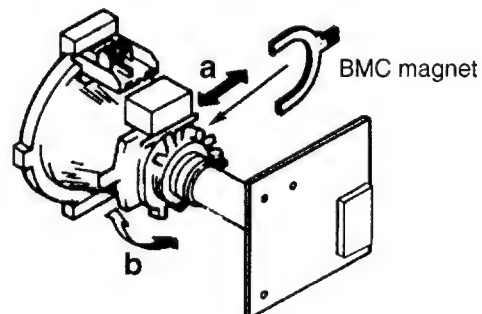
[ 21 inch only ]

If the red and blue dots do not converge with the green dots, perform the following steps.

Move BMC magnet (a) to correct insufficient H.STAT convergence.

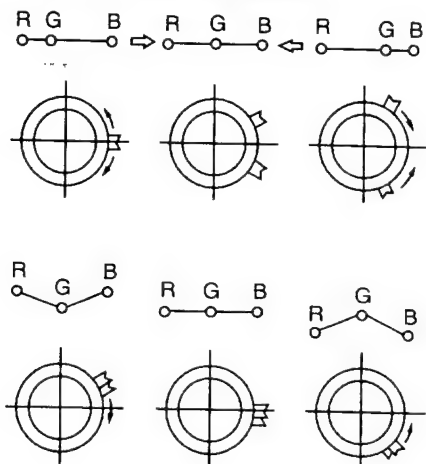
Rotate BMC magnet (b) to correct insufficient V.STAT convergence.

In either case, repeat Beam Landing Adjustment.

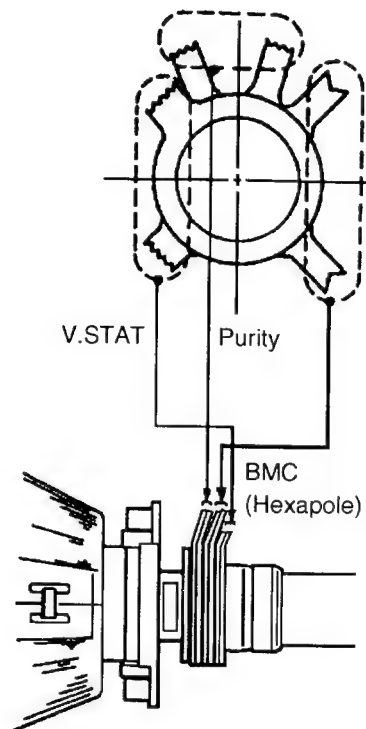


**(KV-25 inch only)**

- Operation of BMC (Hexapole) Magnet



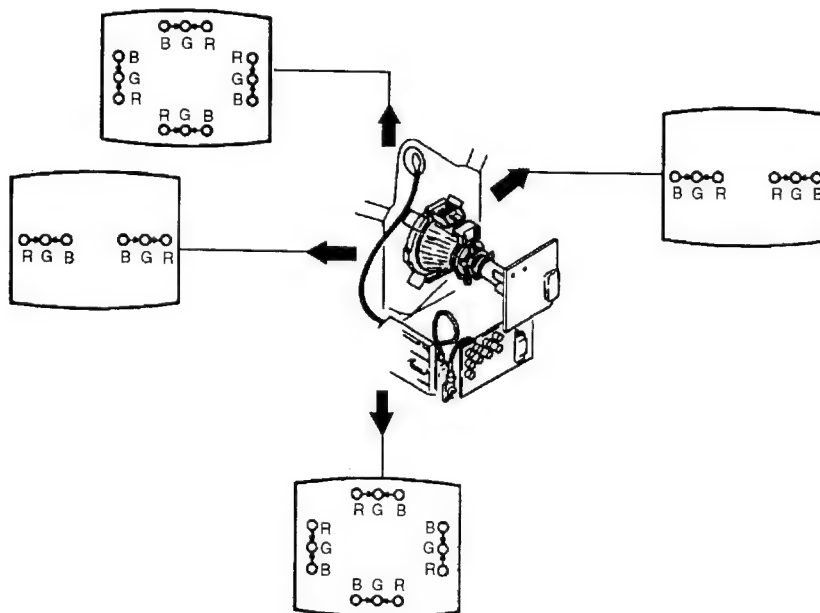
- The respective dot positions resulting from moving each magnet interact, so be sure to perform adjustment while tracking.  
Use the H.STAT VR to adjust the red, green, and blue dots so they coincide at the center of the screen by moving the dots in the horizontal direction).

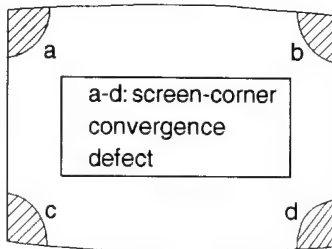


**(2) Dynamic convergence adjustment Preparation:**

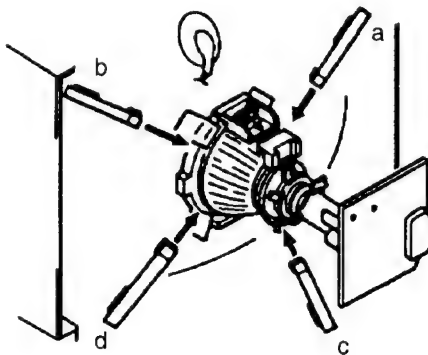
Before starting this adjustment, adjust the horizontal static convergence and the vertical static convergence.

1. Slightly loosen the deflection yoke screws.
2. Remove the deflection yoke spacer.
3. Move the deflection yoke as shown in the figure below and optimize the convergence.
4. Tighten the deflection yoke screws.
5. Install the deflection yoke spacer.



**(3) Screen corner convergence**

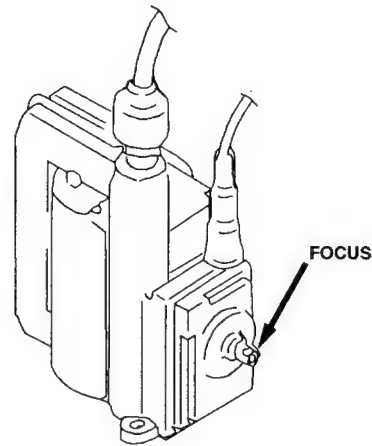
Install the permalloy assembly for the section with faulty corner convergence.



Permalloy ass'y. correction.

**3-3. FOCUS**

Adjust FOCUS so that the whole screen is in best focus.

**3-4. SCREEN (G2) and WHITE BALANCE****[ Screen G2 setting ]**

1. Input dot signal from the pattern generator.
2. Set the picture BRIGHTNESS control to minimum level.
3. Apply 170V DC to the cathodes of R,G and B from an external power source.
4. While watching the picture, adjust the G2 volume (RV701) immediately before fly-back lines disappear.

**[ White balance adjustment ]**

1. Input an all-white signal from the pattern generator.
2. Set the picture BRIGHTNESS and COLOR controls to their normal levels.
3. Use RV704 (B DRIVE) and RV703 (G DRIVE) to adjust for best white balance.
4. Repeat steps 2 and 3 to obtain best results.

### Preparation: (29 inch)

- In order to reduce the influence of geomagnetism on the set's picture tube face it east or west.
- Switch on the set's power and degauss with the degausser.

## 3-5. BEAM LANDING

1. Input the white signal with the pattern generator.  
Contrast } normal  
Brightness }
2. Position neck ass'y as shown in Fig 3-2.
3. Set the pattern generator raster signal to red.
4. Move the deflection yoke to the rear and adjust with the purity control so that the red is at the center and the blue and green take up equally sized areas on each side.  
(See Figures 3-1 through 3-3.)
5. Move the deflection yoke forward and adjust so that the entire screen is red. (See Figure 3-1.)
6. Switch the raster signal to blue, then to green and verify the condition.
7. When the position of the deflection yoke has been decided, fasten the deflection yoke with the screws.
8. If the beam does not land correctly in all the corners, use a magnet to adjust it. (See Figure 3-4.)

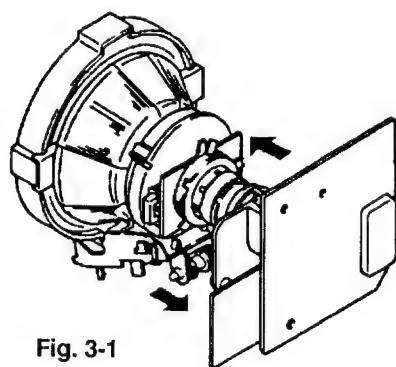


Fig. 3-1

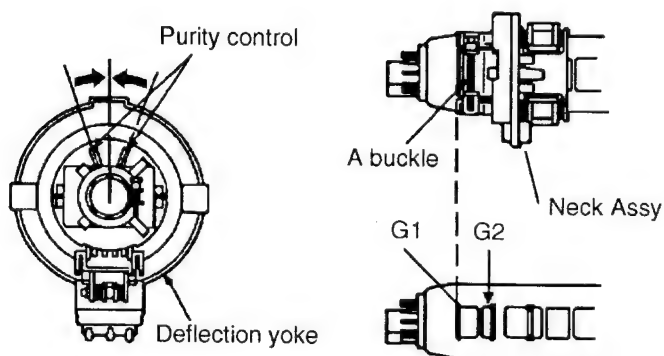


Fig. 3-2

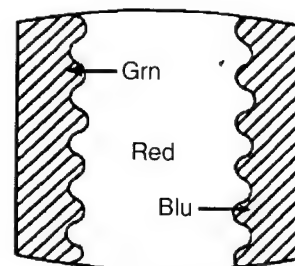


Fig. 3-3

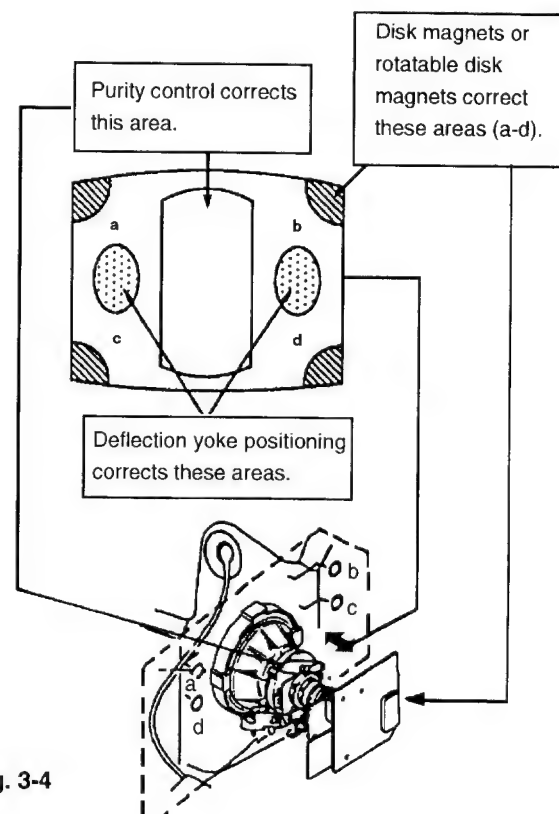


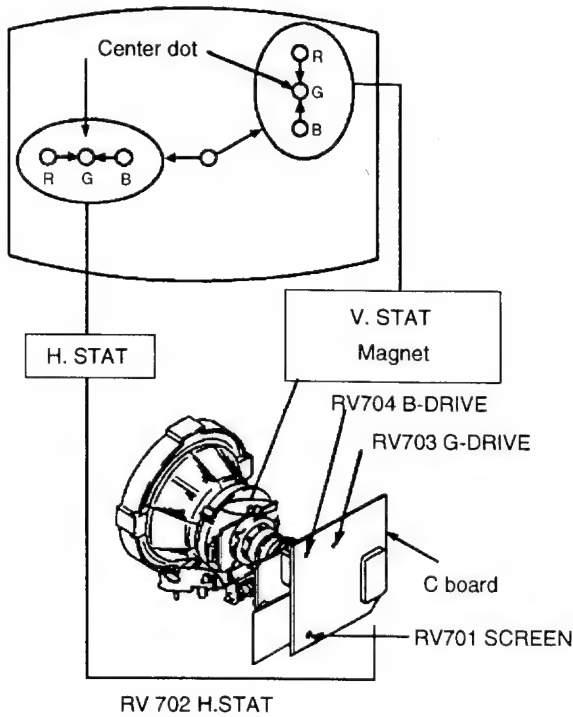
Fig. 3-4

### 3-6. CONVERGENCE

#### Preparation:

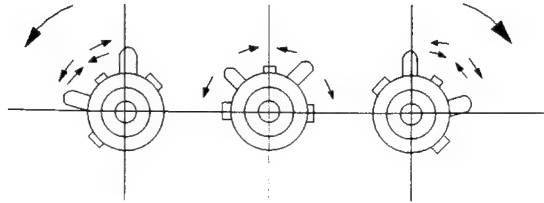
- Before starting, perform FOCUS, H.SIZE, and V.SIZE adjustments.
- Set BRIGHTNESS control to minimum.
- Feed in the dot pattern.

#### (1) Horizontal and Vertical Static Convergence.

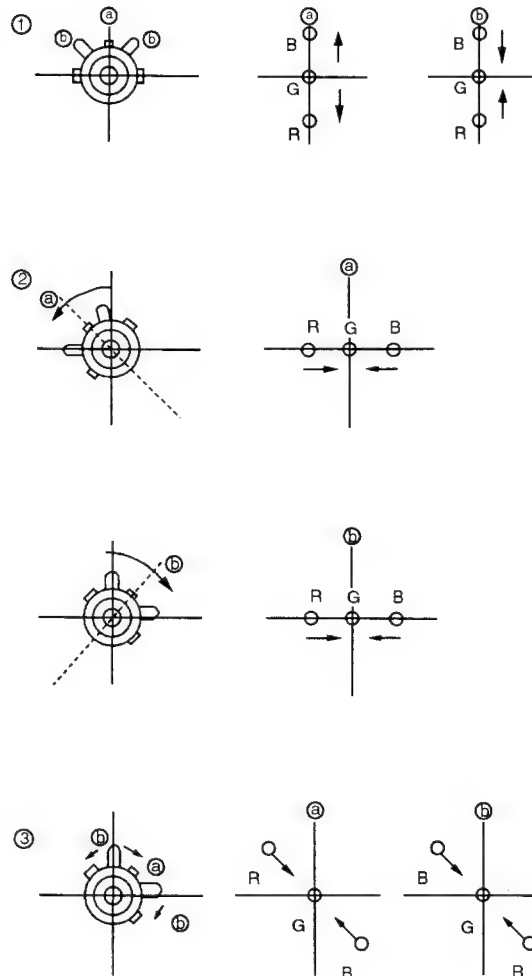


1. (Moving horizontally), adjust the H.STAT control so that the red, green, and blue points are on top of each other at the center of the screen.
2. (Moving vertically), adjust the V.STAT magnet so that the red, green, and blue points are on top of each other at the center of the screen.
3. If the H.STAT variable resistor cannot bring the red, green, and blue points together at the center of the screen, adjust the horizontal convergence with the H.STAT variable resistor and the V. STAT magnet in the manner given below.  
(In this case, the H.STAT variable resistor and the V.STAT magnet influence each other.)

- Tilt the V.STAT magnet and adjust the static convergence by opening or closing the V.STAT magnet.

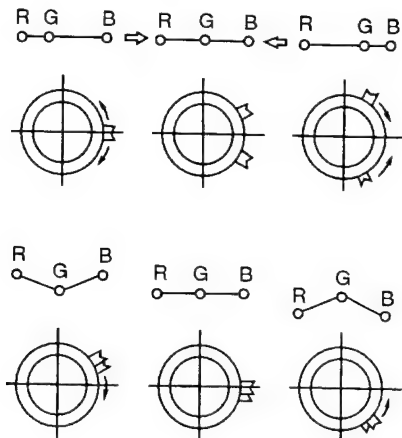


4. If the V.STAT magnet is moved in the direction of the ① and ② arrows, the red, green, and blue points move as shown below.



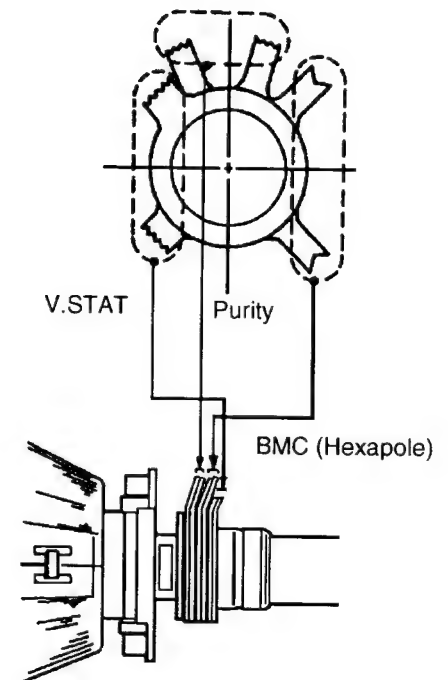


• Operation of BMC (Hexapole) Magnet



The respective dot positions resulting from moving each magnet

- interact, so be sure to perform adjustments while tracking.  
Use the H. STAT VR to adjust the red, green, and blue dots so they coincide at the center of the screen (by moving the dots in the horizontal direction).

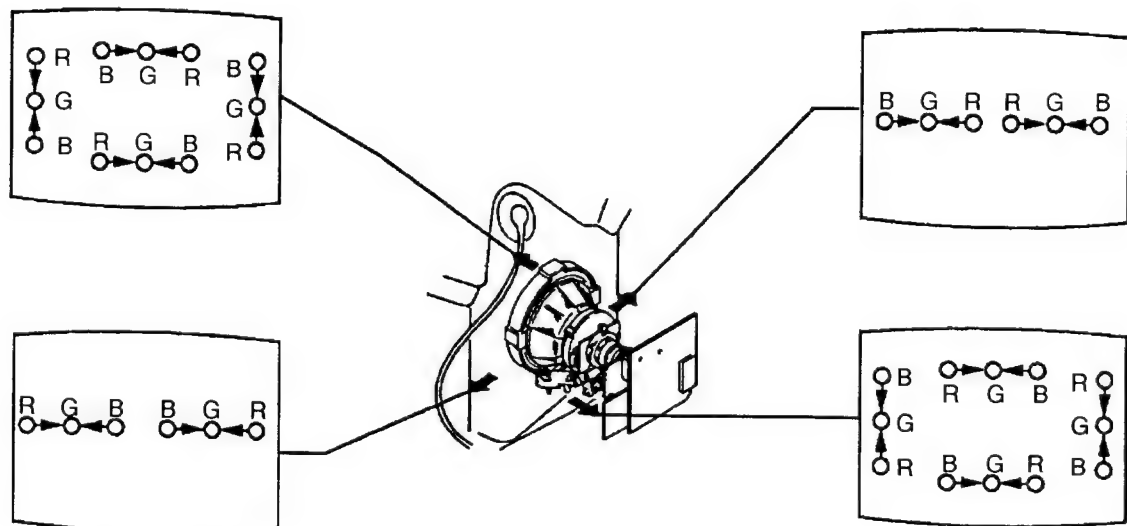


**(2) Dynamic convergence adjustment preparation :**

Before starting this adjustment, adjust the horizontal static convergence and the vertical static convergence.

1. Slightly loosen the deflection yoke screws.
2. Remove the deflection yoke spacer.

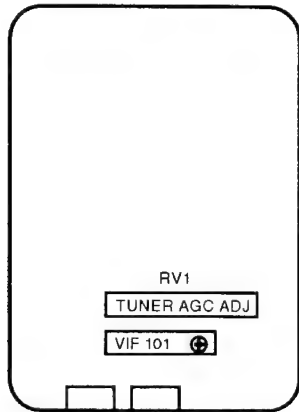
3. Move the deflection yoke as shown in the figure below and optimize the convergence.
4. Tighten the deflection yoke screws.
5. Install the deflection yoke spacer.



## SECTION 4

### CIRCUIT ADJUSTMENTS

#### 4-1. A BOARD ADJUSTMENT

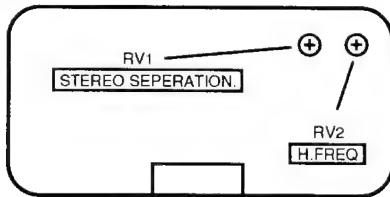


A BOARD (COMPONENT SIDE)

##### TUNER AGC ADJUSTMENT (VIF101, RV1)

1. Align with an appropriate signal between stations.
2. Adjust AGC VR so that the snow and crossmodulation just disappear from the picture.

#### IFG5.5S SIF



IFG5.5S SIF -component side-

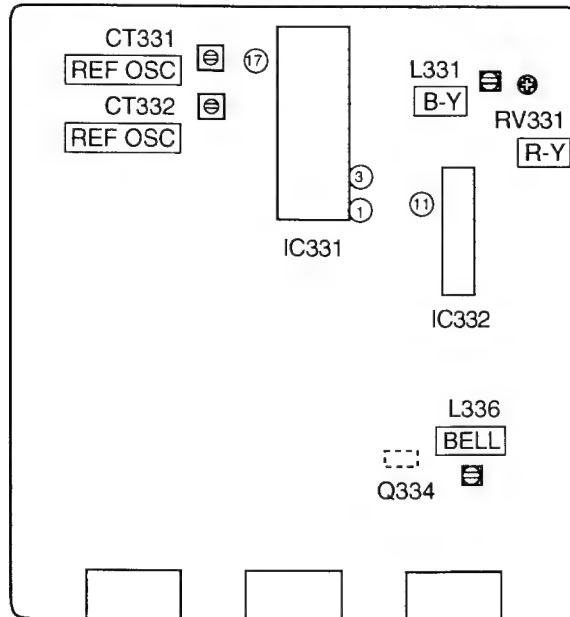
##### STEREO SEPERATION ADJUSTMENT (RV1)

1. Input stereo signals. (L-CH 400Hz, R-CH 1KHz)
2. Check the stereo indicator.
3. Connect an oscilloscope to pin (8) (CH1) of CN1 through band pass filter of 1KHz.
4. Adjust RV1 so that 1KHz voltage goes down to the minimum.

##### H FREQ (RV2)

1. Input a PAL COLOR BAR signal, then connect a jumper wire between pin (12) IC4 and GND.
2. Connect a frequency counter to pin (4) IFG5.5S (HP) of CN1 through a probe of 10:1.
3. Adjust RV2 (H.FREQ)  $15.625 \pm 50\text{Hz}$ .
4. After adjustment, remove the jumper wire.

#### 4-2. B BOARD ADJUSTMENTS



##### REFERENCE OSCILLATOR ADJUSTMENT (CT332 8.8MHz)

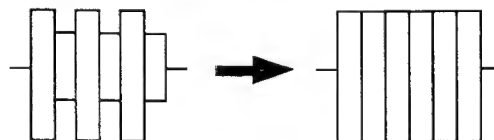
1. Input a PAL color bar signal.
2. Ground pin (17) of the IC331.
3. Adjust CT332 to obtain synchronization.

##### REFERENCE OSCILLATOR ADJUSTMENT (CT331 7.16MHz)

1. Input a NTSC color bar signal.
2. Ground pin (17) of the IC331.
3. Adjust CT331 to obtain synchronization.
4. Remove the jumper grounding pin (17) of IC331.

##### BELL FILTER ADJUSTMENT (L336)

1. Input a SECAM color bar signal.
2. Connect the oscilloscope to the emitter of Q334.
3. Adjust L336 so that the waveform is flat.

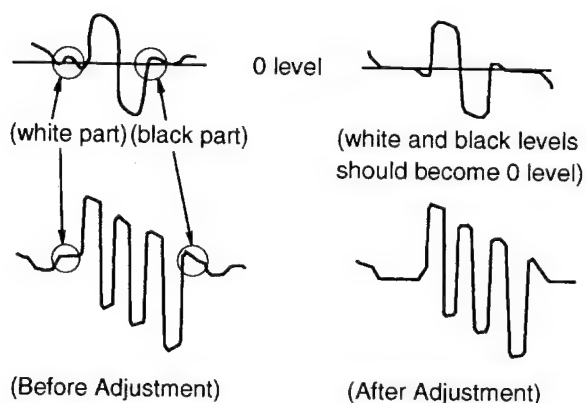


<Before Adjustment>

<After Adjustment>

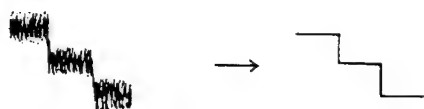
### DISCRIMINATOR ADJUSTMENTS (RV331 and L331)

1. Input a Secam color bar signal.
2. Connect the oscilloscope to pin ① of IC331.
3. Adjust RV331 until the white and black sections of the waveform at pin ① are at the 0 level.  
Connect the oscilloscope to pin ③ of IC331
4. Adjust L331 until the white and black sections of the waveform at pin ③ are at the 0 level.



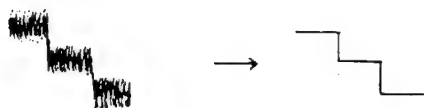
### SECAM TRAP (L312)

1. Input a SECAM color bar signal.
2. Connect the oscilloscope to Q340 emitter and adjust L312 to minimize color carrier on the Y-signal.

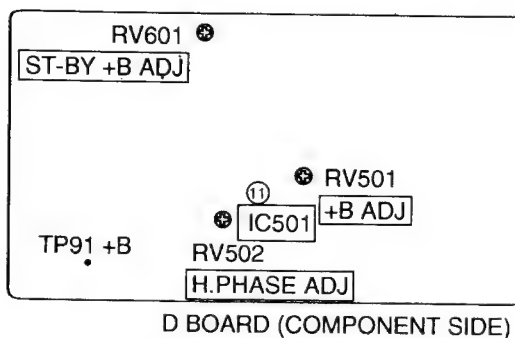


### NTSC TRAP (L308)

1. Input a NTSC (3.58) color bar signal.
2. Connect the oscilloscope to Q340 emitter and adjust L308 to minimize color carrier on the Y-signal.



## 4-3. D BOARD ADJUSTMENTS



### +B ADJUSTMENT (RV501)

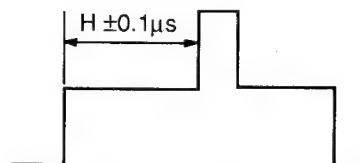
1. Connect the digital multimeter to TP91.
2. Adjust RV501 to obtain  $135 \pm 0.2V$ .

### ST-BY +B ADJUSTMENT (RV601)

1. Put the system into  $\Phi$  standby mode (remote commander).
2. Connect the digital multimeter to TP91.
3. Adjust RV601 to obtain  $135 \pm 3V$ .
4. Take the system out of  $\Phi$  standby mode (remote commander).

### H.PHASE ADJUSTMENT (RV502)

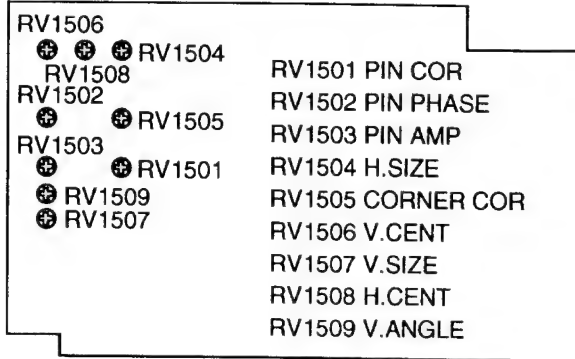
1. Input a PAL color bar signal.
2. Set the picture and brightness controls to their normal levels.
3. Set RV1508 (H.CENT) to its mechanical center.
4. Connect the oscilloscope to pin ⑪ (SCP) of IC501.
5. Rotate RV502 to adjust to H



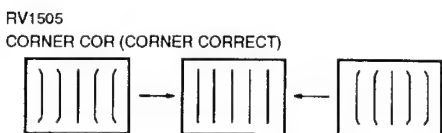
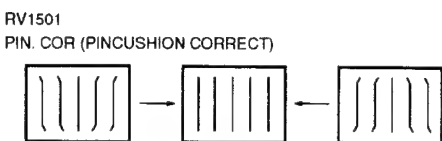
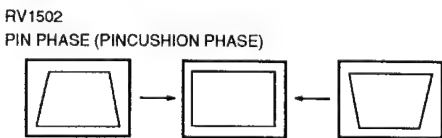
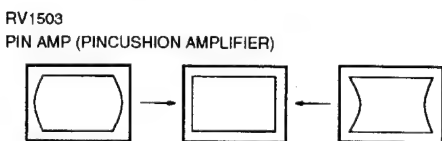
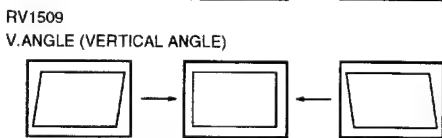
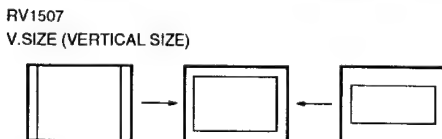
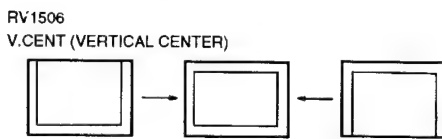
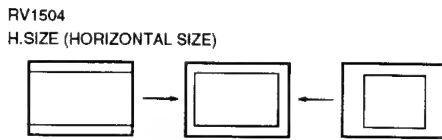
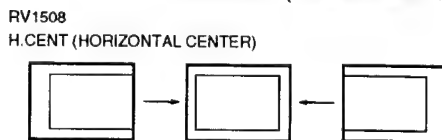
Standard of H.PHASE

Model Size	H
21"	5.6μs
25"	5.1μs
29"	5.5μs

#### 4-4. J1 BOARD ADJUSTMENTS



J1 BOARD (COMPONENT SIDE)



#### 4-5. SECONDARY ADJUSTMENTS

##### SUB BRIGHTNESS ADJUSTMENT

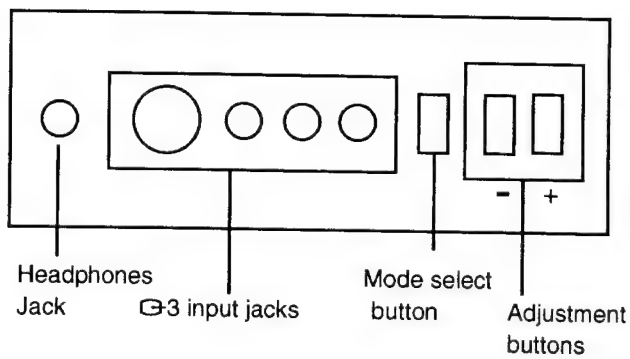
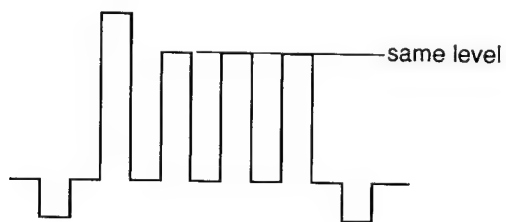
1. Set the system to receive a test pattern.
2. Press →•← on the remote commander to put the system into normal mode.
3. Switch off the power.
4. While depressing the adjusting buttons + and - simultaneously, turn on the power. (SUB mode is obtained)
5. Minimize the ● contrast setting.
6. Adjust the ✱ brightness control so that the gray scale 0 IRE section is cut off completely and the 20 IRE section is barely glowing.
7. Depress the ◇ (store) button of the remote commander. (SUB mode is released)

If there is no test color pattern

1. Set the system to receive a color pattern.
2. Press →•← on the remote commander to put the system into normal mode.  
Set the ● color to its normal state.
- 3-5. Steps are the same as above.
6. Since 20 IRE is nearly blue, adjust the ✱ brightness control so that the blue barely glows.
7. Same as step 7 above.
8. Press →•← on the remote commander to put the system into normal mode.

### SUB COLOR ADJUSTMENT

1. Set the system to receive color bars.
2. Press  $\rightarrow \bullet \leftarrow$  on the remote commander to put the system into normal mode.
3. Cut off the power.
4. While depressing the adjustment buttons + and - simultaneously, turn on the power. (SUB mode is obtained).
5. Adjust the color control so that the B out waveform (pin ⑤ of C board connector CNC72) is as shown in the figure below.
6. Depress the  $\diamond$  (store) button of the remote commander. (SUB mode is released)



## 4-6. SECONDARY ADJUSTMENTS

### SUB BRIGHTNESS ADJUSTMENT

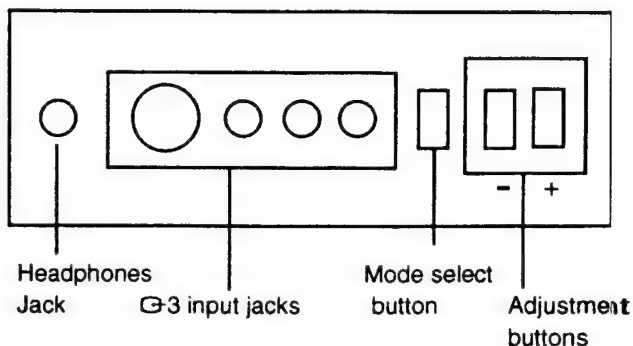
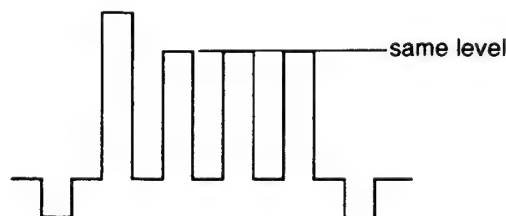
1. Set the system to receive a test pattern.
2. Press  $\rightarrow \bullet \leftarrow$  on the remote commander to put the system into normal mode.
3. Switch off the power.
4. While depressing the adjusting buttons + and - simultaneously, turn on the power. (SUB mode is obtained)
5. Minimize the  $\text{⦿}$  contrast setting.
6. Adjust the  $\text{⚙}$  brightness control so that the gray scale 0 IRE section is cut off completely and the 20 IRE section is barely glowing.
7. Depress the  $\text{◇}$  (store) button of the remote commander. (SUB mode is released)

If there is no test color pattern

1. Set the system to receive a color pattern.
2. Press  $\rightarrow \bullet \leftarrow$  on the remote commander to put the system into normal mode.  
Set the  $\text{⦿}$  color to its normal state.
- 3-5. Steps are the same as above.
6. Since 20 IRE is nearly blue, adjust the  $\text{⚙}$  brightness control so that the blue barely glows.
7. Same as step 7 above.
8. Press  $\rightarrow \bullet \leftarrow$  on the remote commander to put the system into normal mode.

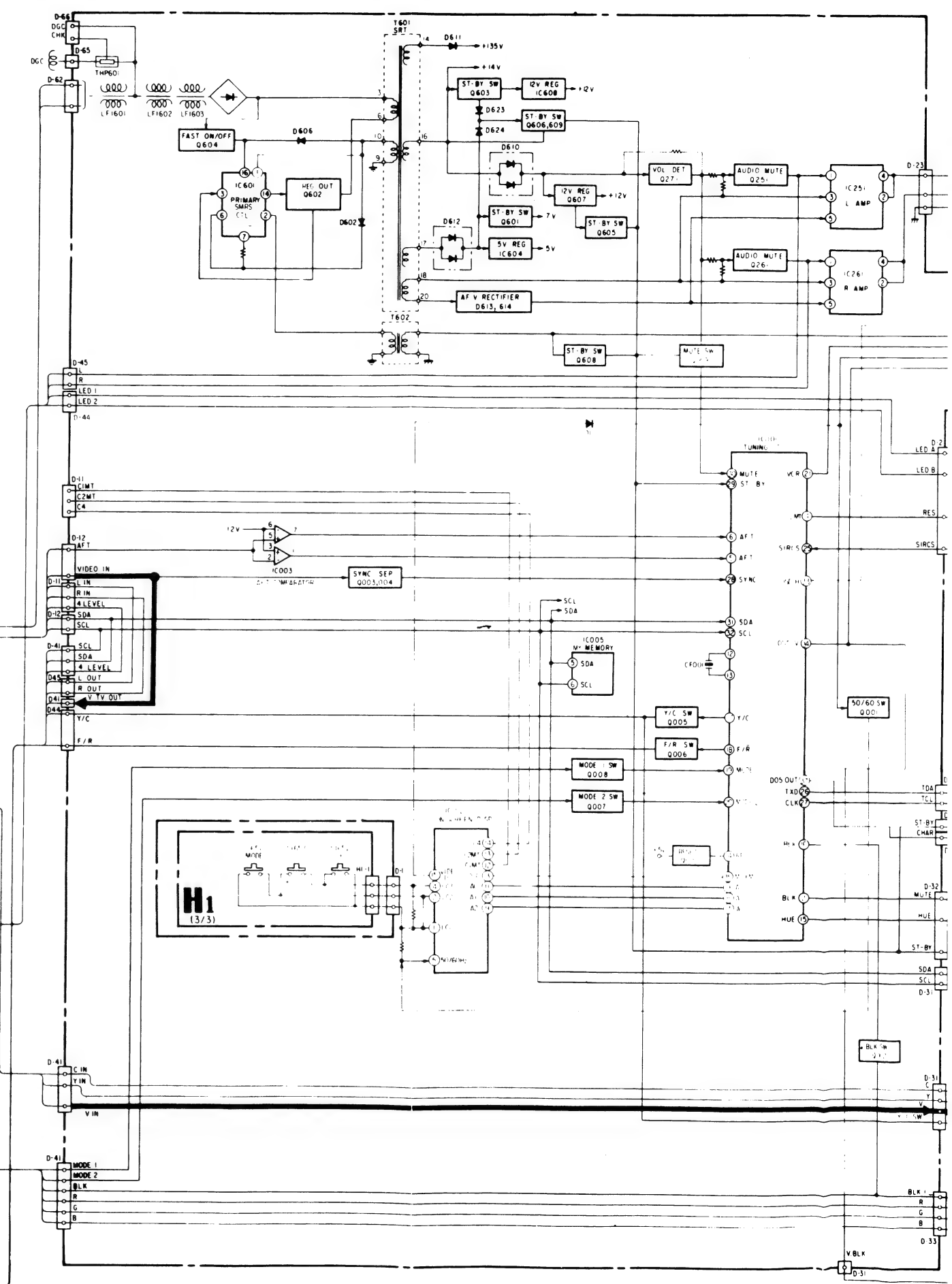
### SUB COLOR ADJUSTMENT

1. Set the system to receive color bars.
2. Press  $\rightarrow \bullet \leftarrow$  on the remote commander to put the system into normal mode.
3. Cut off the power.
4. While depressing the adjustment buttons + and - simultaneously, turn on the power. (SUB mode is obtained).
5. Adjust the color control so that the B out waveform (pin ⑤ of C board connector CNC72) is as shown in the figure below.
6. Depress the  $\text{◇}$  (store) button of the remote commander. (SUB mode is released)



## SECTION 5

### DIAGRAMS









H<sub>1</sub>

CONTROL SW,  
AV INPUT,  
HEADPHONE

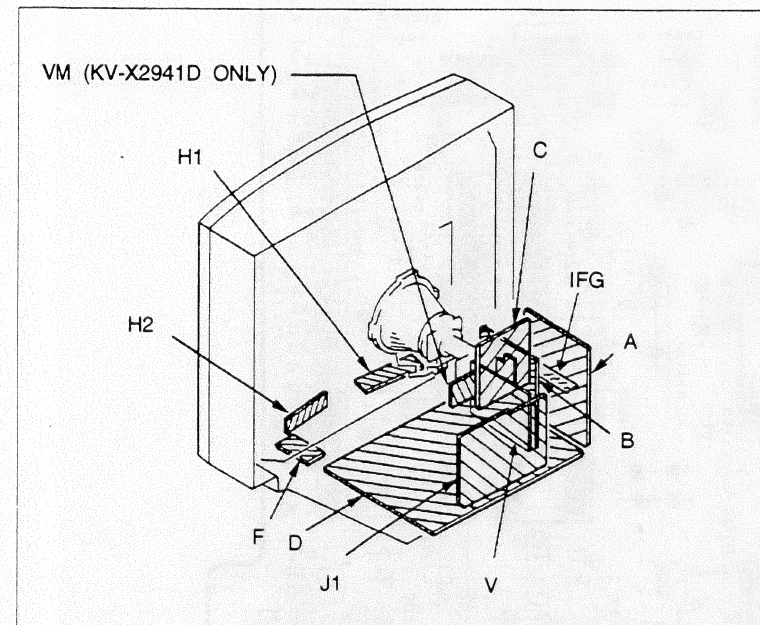
H<sub>2</sub>

SIRCS RECEIVER,  
INDICATOR

F

[AC IN POWER SW]

## 5-2. CIRCUIT BOARD LOCATION



## 5-3. SCHEMATIC DIAGRAMS AND PRINTED WIRING BOARDS - Conductor Side -

### Note :

- All capacitors are in  $\mu\text{F}$  unless otherwise noted. pF:  $\mu\text{F}$  50WV or less are not indicated except for electrolytic and tantalums.
- All resistors are in ohms.  
 $k\Omega = 1000\Omega$ ,  $M\Omega = 1000K\Omega$
- Indication of resistance, which does not have one for rating electrical power, is as follows.

Pitch : 5 mm  
Rating electrical power  $\frac{1}{4}$  W

- : nonflammable resistor.
- : internal component.
- : panel designation, or adjustment for repair.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- $\perp$  : earth - ground.
- $\text{///}$  : earth - chassis.
- $\text{---}$  : no mounted.

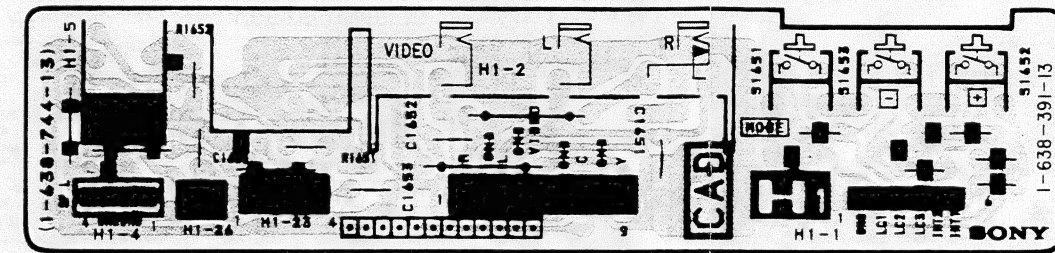
**Note :** The components identified by shading and marked are critical for safety. Replace only with part number specified.

### Reference information

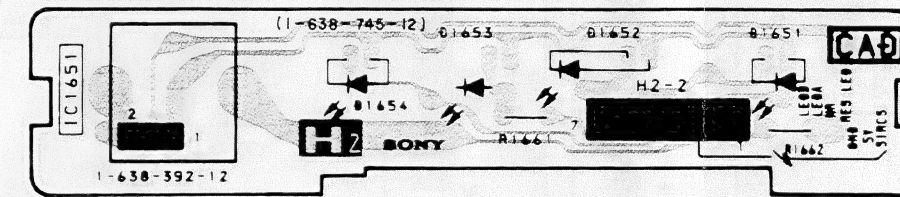
RESISTOR	: RN	METAL FILM
	: RC	SOLID
	: FPRD	NONFLAMMABLE CARBON
	: FUSE	NONFLAMMABLE FUSIBLE
	: RS	NONFLAMMABLE METAL OXIDE
	: RB	NONFLAMMABLE CEMENT
	: RW	NONFLAMMABLE WIREWOUND
COIL	: $\times$	ADJUSTABLE RESISTOR
	: LF-8L	MICRO INDUCTOR
CAPACITOR	: TA	TANTALUM
	: PS	STYROL
	: PP	POLYPROPYLENE
	: PT	MYLAR
	: MPS	METALIZED POLYESTER
	: MPP	METALIZED POLYPROPYLENE
	: ALB	BIPOLAR
	: ALT	HIGH TEMPERATURE
	: ALR	HIGH RIPPLE

- Readings are taken with a colour-bar signal input.
- Readings are taken with 10M $\Omega$  digital multimeter.
- Voltages are dc with respect to ground unless otherwise noted.
- Voltage variations may be noted due to normal production tolerances.
- All voltages are in V.
- Circled numbers are waveform references.
- : B+ bus.
- : signal path. (RF)

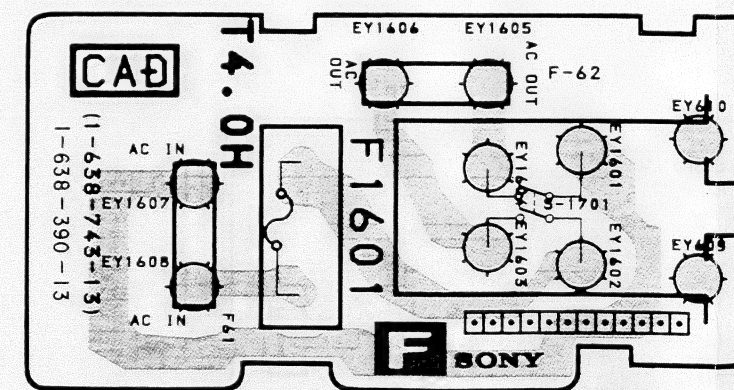
### — H1 Board —



### — H2 Board —



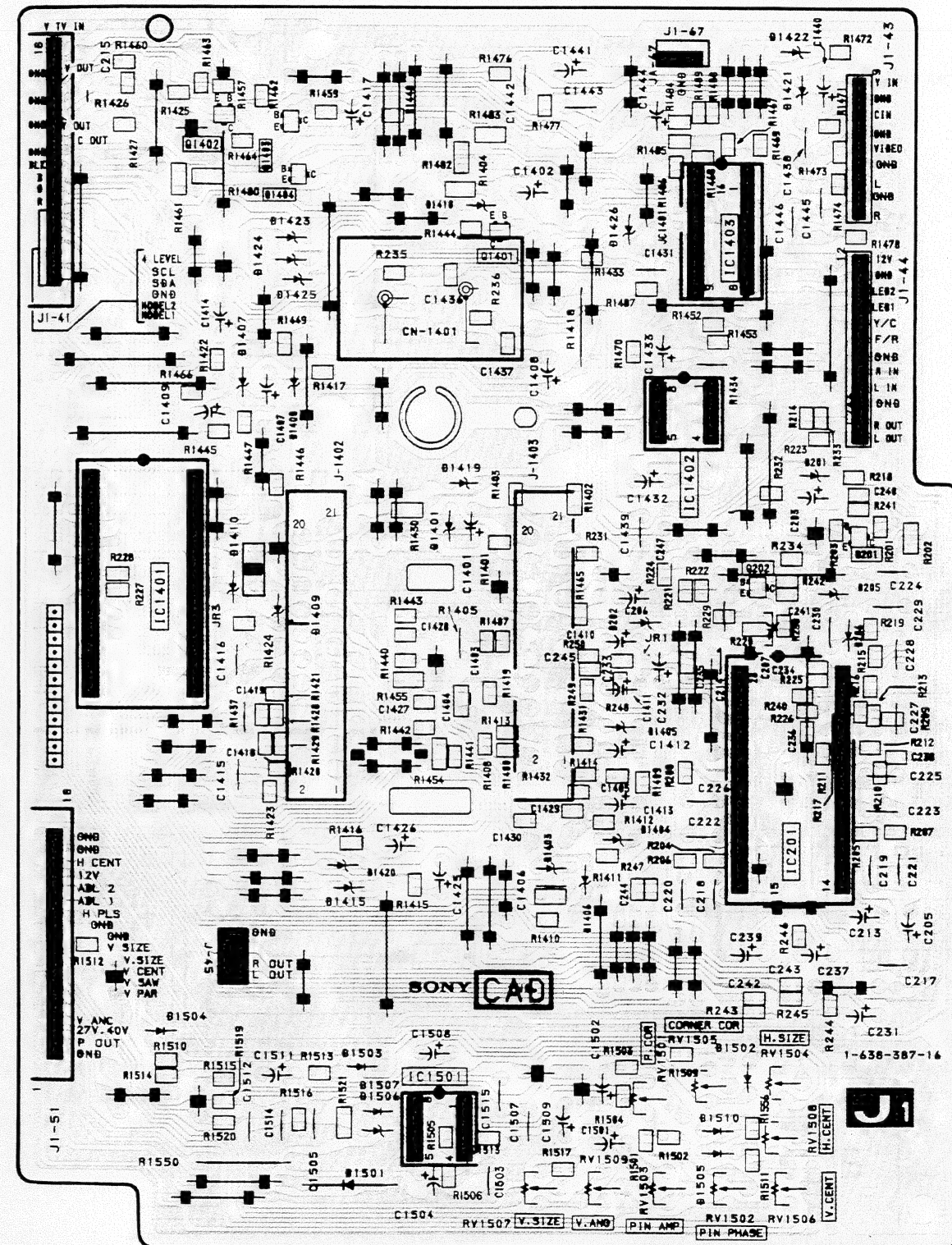
### — F Board —



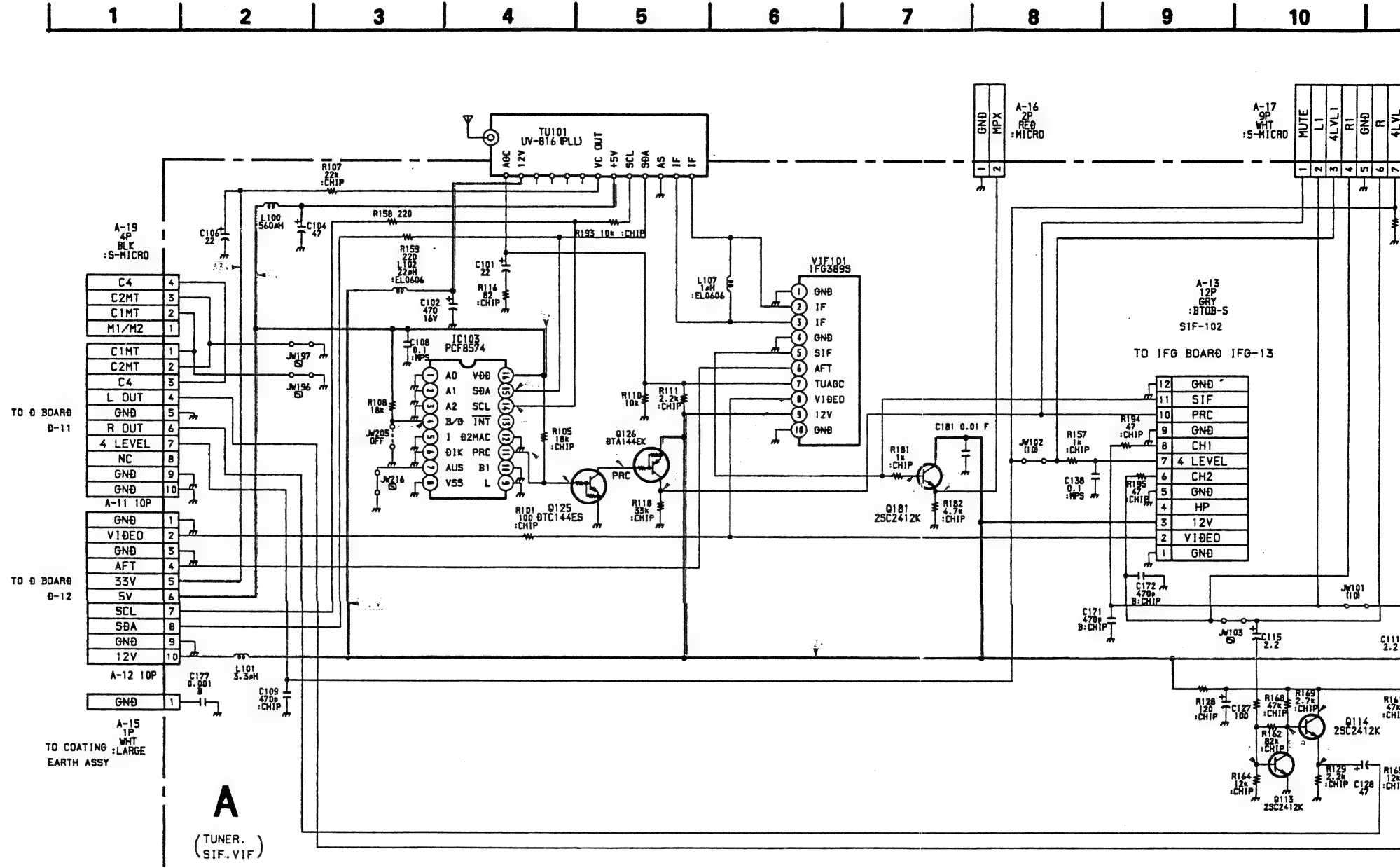


**J<sub>1</sub>** AUDIO CONTROL, AV INPUT  
Y/C INPUT, SCART VIDEO OUT  
EAST-WEST CORRECTION

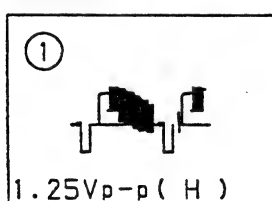
— J1 Board —





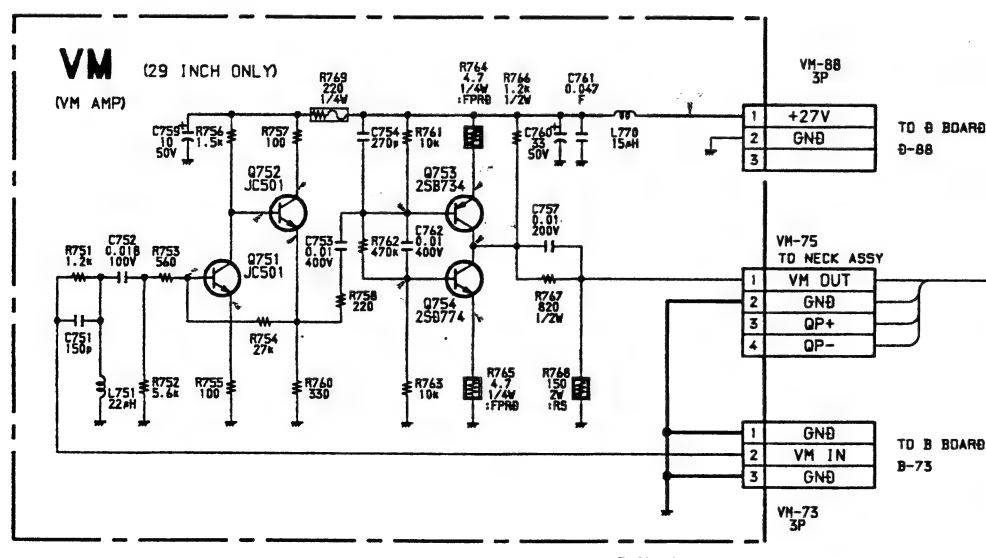
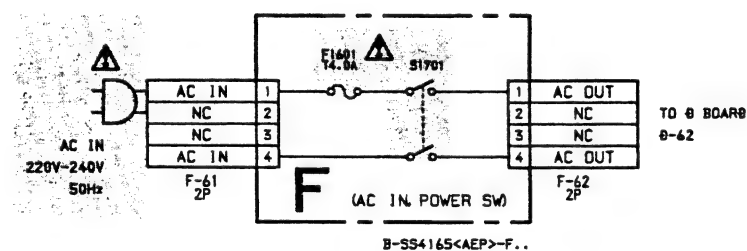


Waveform A Board



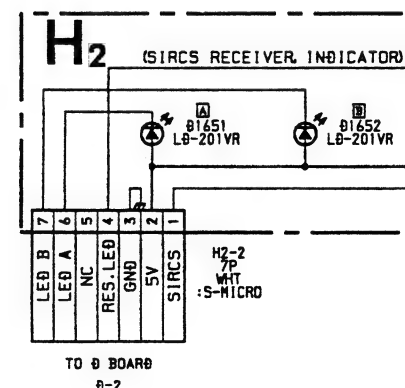
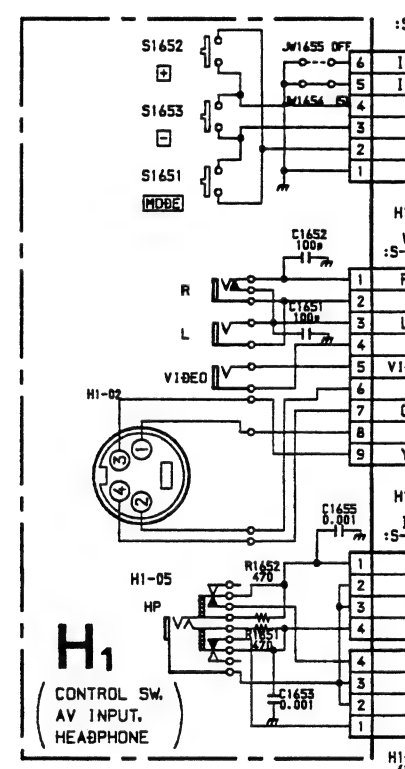
A Board

IC103	EXPANDER
Q113	AUDIO AMP
Q114	AUDIO AMP
Q115	AUDIO AMP
Q116	AUDIO AMP
Q125	MUTE SW
Q126	MUTE SW
Q181	BUFFER



VM Board (29 inch)

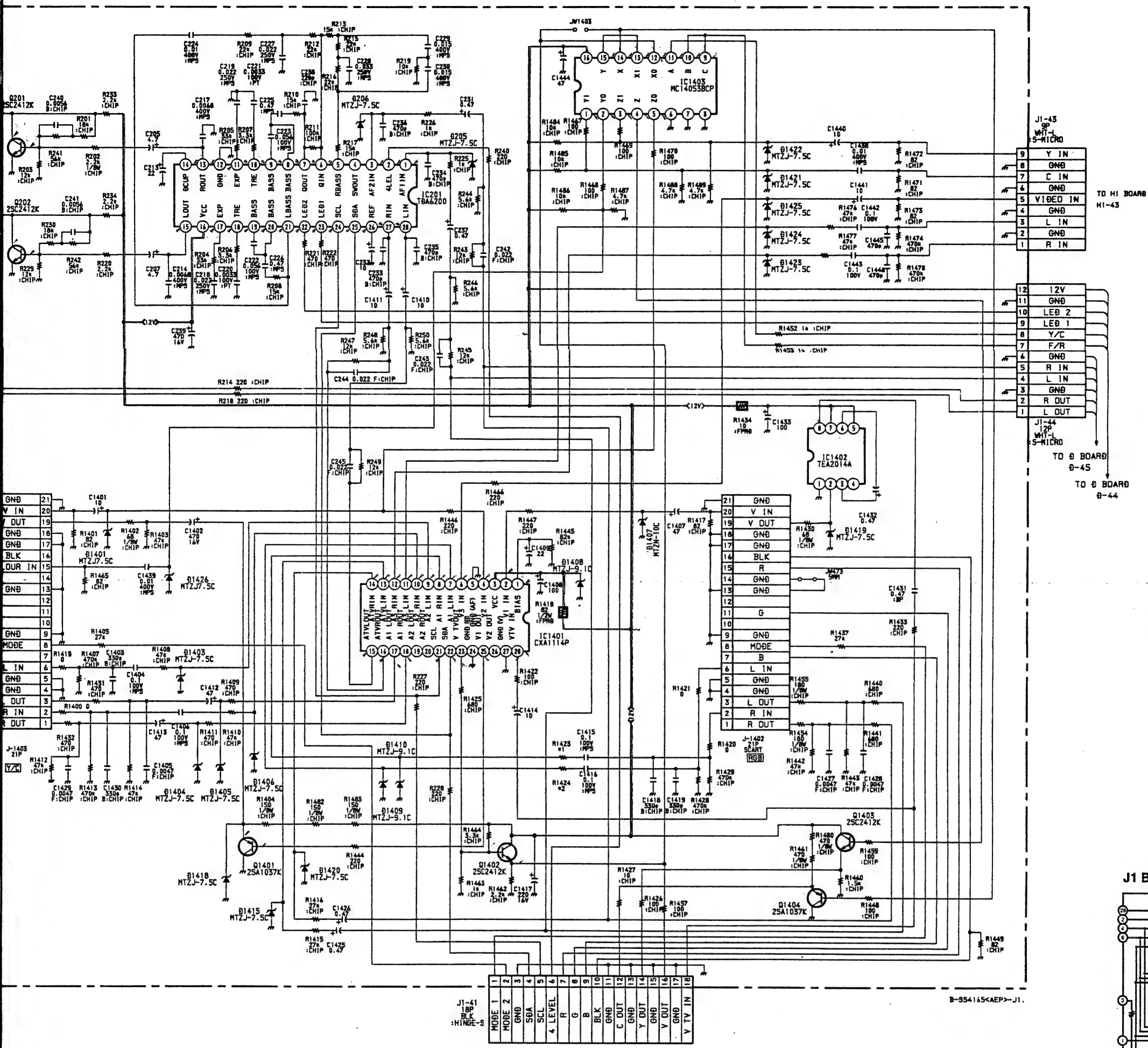
Q751	REF-AMP
Q752	REF-AMP
Q753	PUSH-PULL OUT
Q754	PUSH-PULL OUT



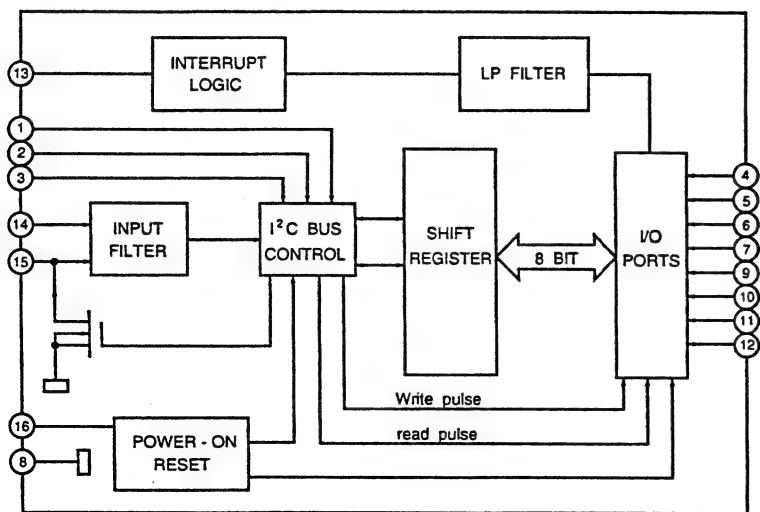
H2 Board

IC1651	INFRARED RECEIV
D1651	AUDIO CHANNEL A
D1652	AUDIO CHANNEL B
D1654	RESET

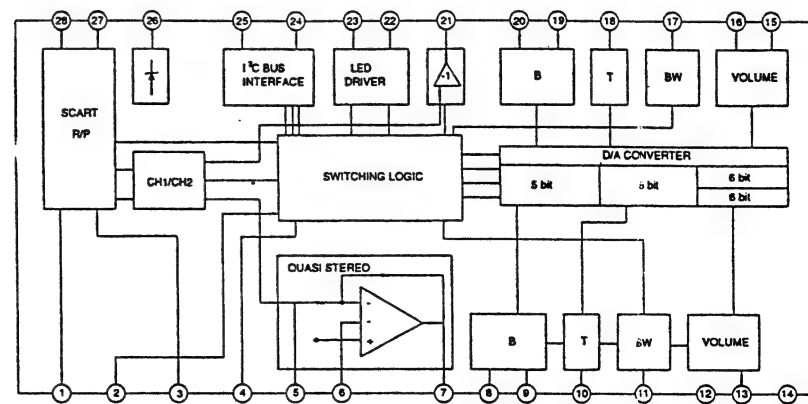


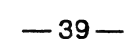


A Board IC103 PCF8574

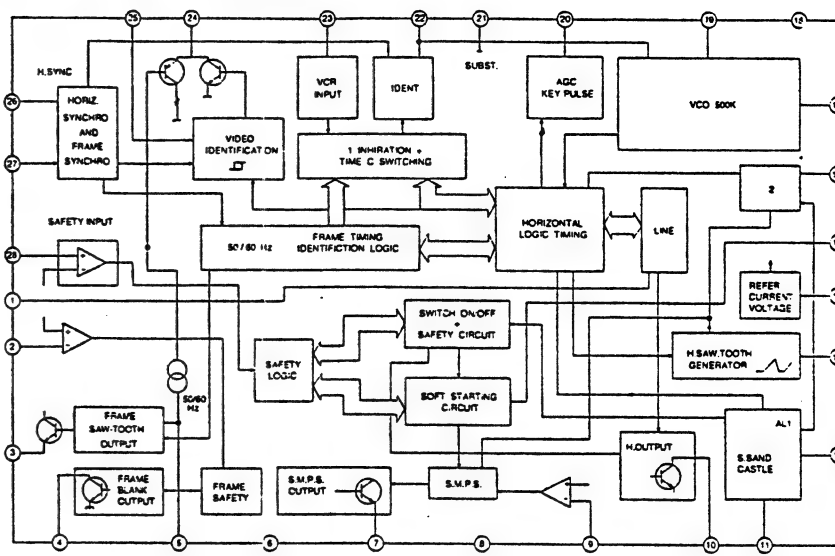
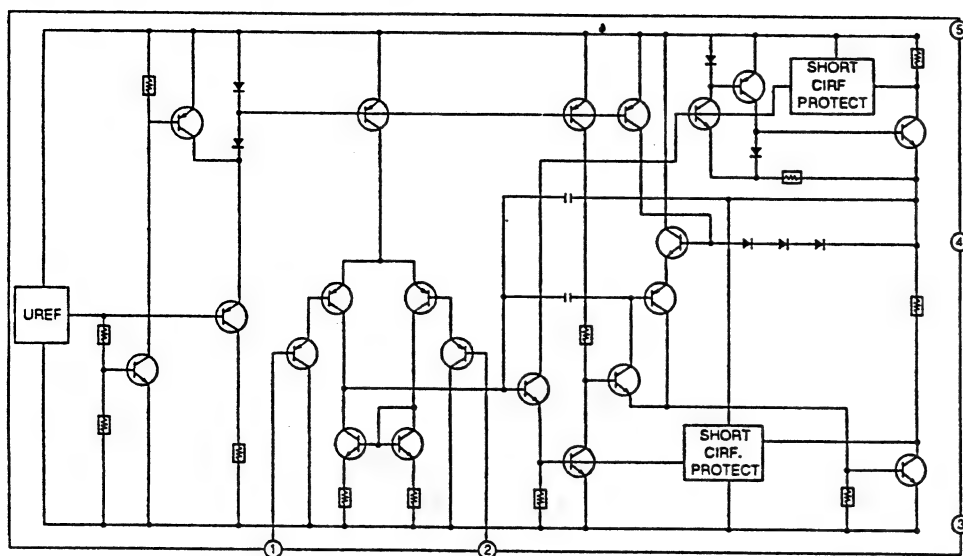


J1 Board IC201 TDA6200

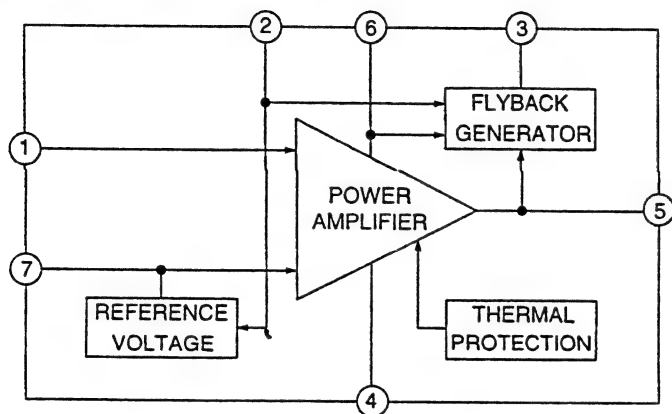




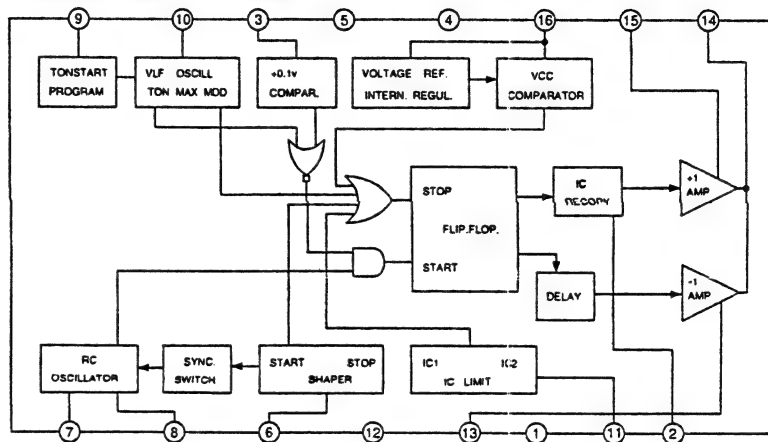




D Board IC502 TDA8170



D Board IC601 TEA2260

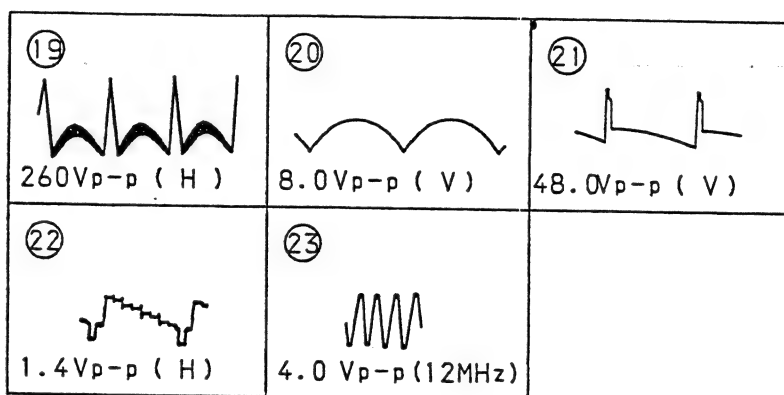
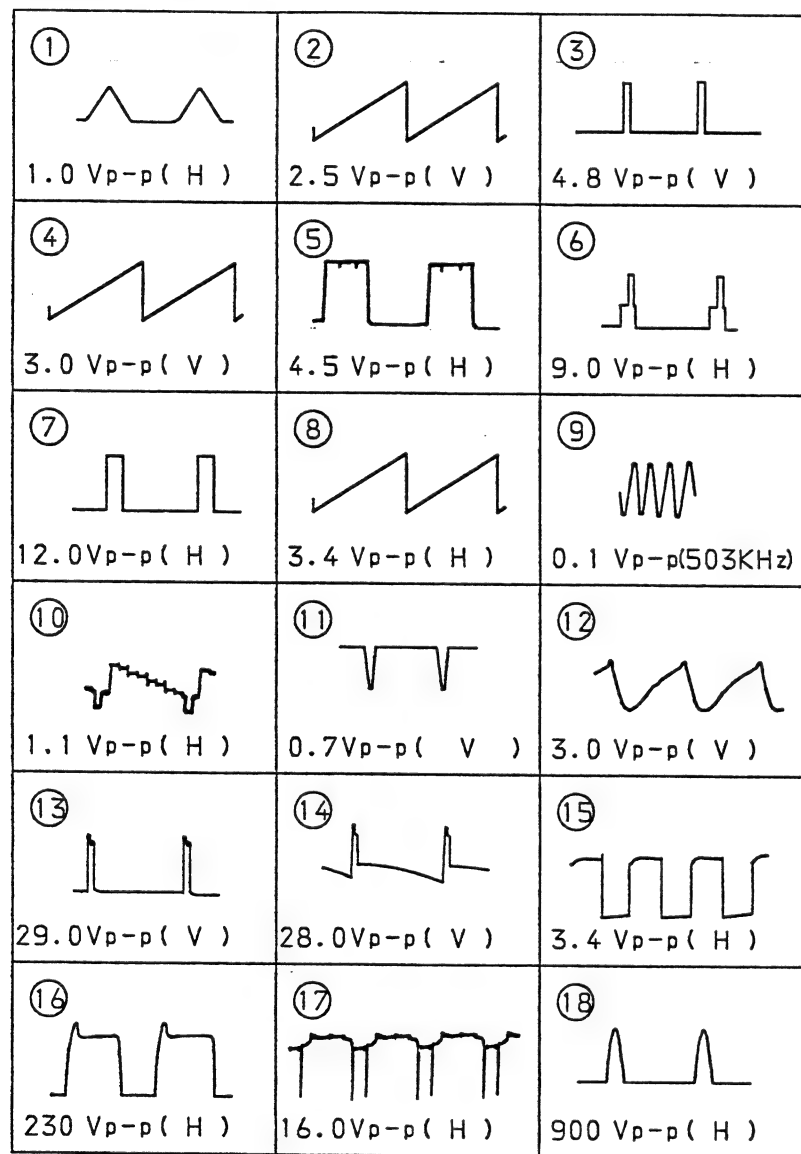


## D Board

IC001	TUNING CTL
IC002	ON SCREEN DISPLAY
IC003	AFT COMPARATOR
IC005	MY MEMORY
IC251	AUDIO OUT (L)
IC261	AUDIO OUT (R)
IC501	DEFLECTION PROCESSOR
IC502	VERTICAL OUT
IC601	PRIMARY SMRS CTL
IC604	+5V REGULATOR
IC608	+12V REGULATOR

Q001	50/60Hz SWITCH
Q002	BLK SWITCH
Q003	SYNC SEPARATOR
Q004	SYNC SEPARATOR
Q005	Y/C SWITCH
Q006	FRONT REAR SWITCH
Q007	MODE 2 SWITCH
Q008	MODE 1 SWITCH
Q009	MUTE SWITCH
Q010	RESET
Q251	AUDIO MUTE
Q261	AUDIO MUTE
Q271	VOLTAGE DETECT
Q502	CONSTANT CURRENT SC
Q505	VERTICAL CENTER
Q506	VERTICAL CENTER
Q507	CANAL +BLK LEVEL
Q598	VIDEO AMP
Q601	STBY SWITCH
Q602	REG OUT
Q603	STBY SWITCH
Q604	FAST ON/OFF
Q605	STBY SWITCH
Q606	STBY SWITCH
Q607	+12V REGULATOR
Q608	STBY SWITCH
Q609	STBY SWITCH
Q801	ABL AMP
Q804	HORIZONTAL OUT
Q805	HORIZONTAL DRIVER

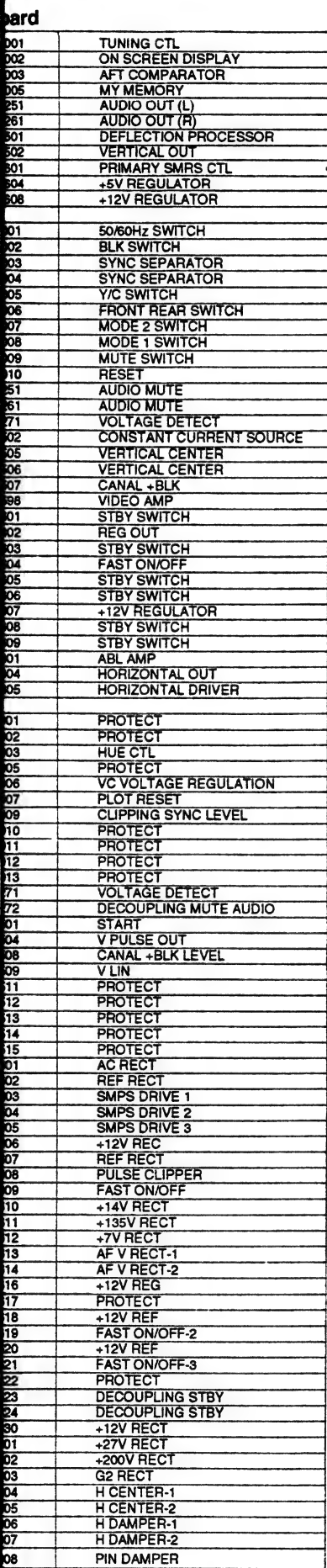
## Waveform D Board

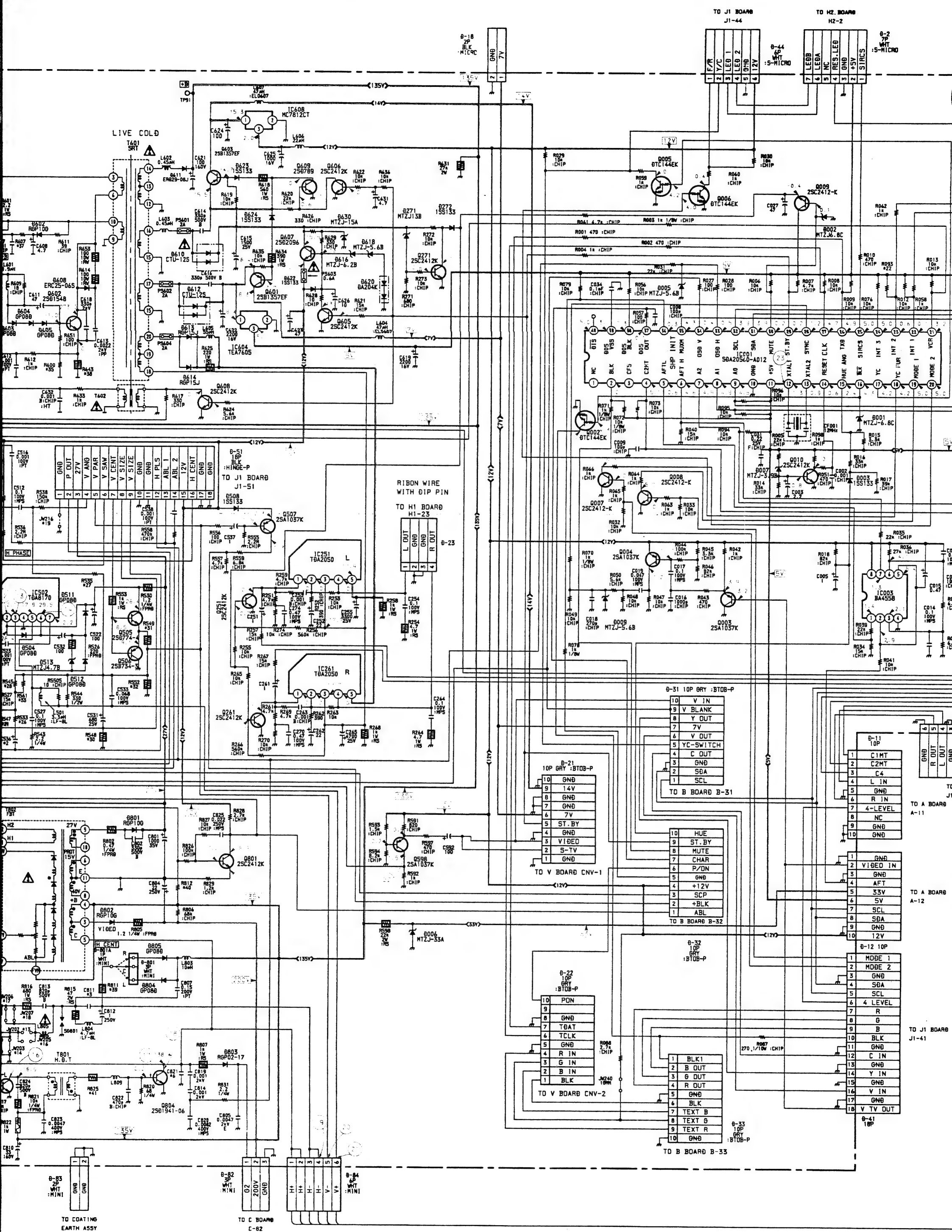
D Board  
\* Mark List

	21 inch	25 inch	29 inch
*1 C519	0.47	0.47	0.33
*2 C536	4.7uF	10uF	10uF
*3 C811	1uF	2uF	2uF
*4 C815	1uF	1uF	0.82uF
*5 C817	0.0106uF	0.015uF	0.017uF
*6 C821	680pF	680pF	470pF
*7 D506	DA204K	DA204K	
*8 D509		1SS133	1SS133
*9 D514	5MM (JW)	5MM (JW)	1SS133
*10 D515			1SS133
*11 D807		ERC0615S	ERC06-15S
*12 D808	ERD28-08S	ERD29-08J	ERD29-08J
*13 JW202			5MM
*14 JW203	5MM	5MM	
*15 JW204	5MM	5MM	
*16 JW205			5MM
*17 JW206	5MM	5MM	
*18 JW207	5MM	5MM	
*19 JW216	15MM	15MM	
*20 JW229	10MM	10MM	
*21 L801			3.9MMH
*22 R093	10K		10K
*23 R525	1K	1K	
*24 R531		120K	120K
*25 R532		1K	1K
*26 R533	180	0	0
*27 R535	4.7M	2.2M	2.2M
*28 R545	39K	22K	22K
*29 R547	5.6K	3.3K	3.3K
*30 R548	1.2	1	1
*31 R549	470	390	390
*32 R552	1.2K		
*33 R561			270K
*34 R570			680
*35 R600		1	1
*36 R603	15	12	12
*37 R607	4.7K	4.7K	5.6K
*38 R643	0.15 2W	0.12 2W	0.12 2W
*39 R811	100 1W	22 2W F	22 2W F
*40 R812	75K 1/2W	68K 1/2W	51K 1/2W
*41 R825	1 1W	0.47 1W	0.47 1W
*42 R5503	4.7	4.7	10
*43 R5506			12K

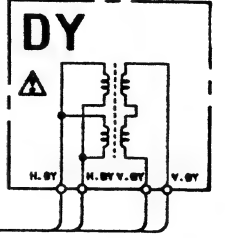
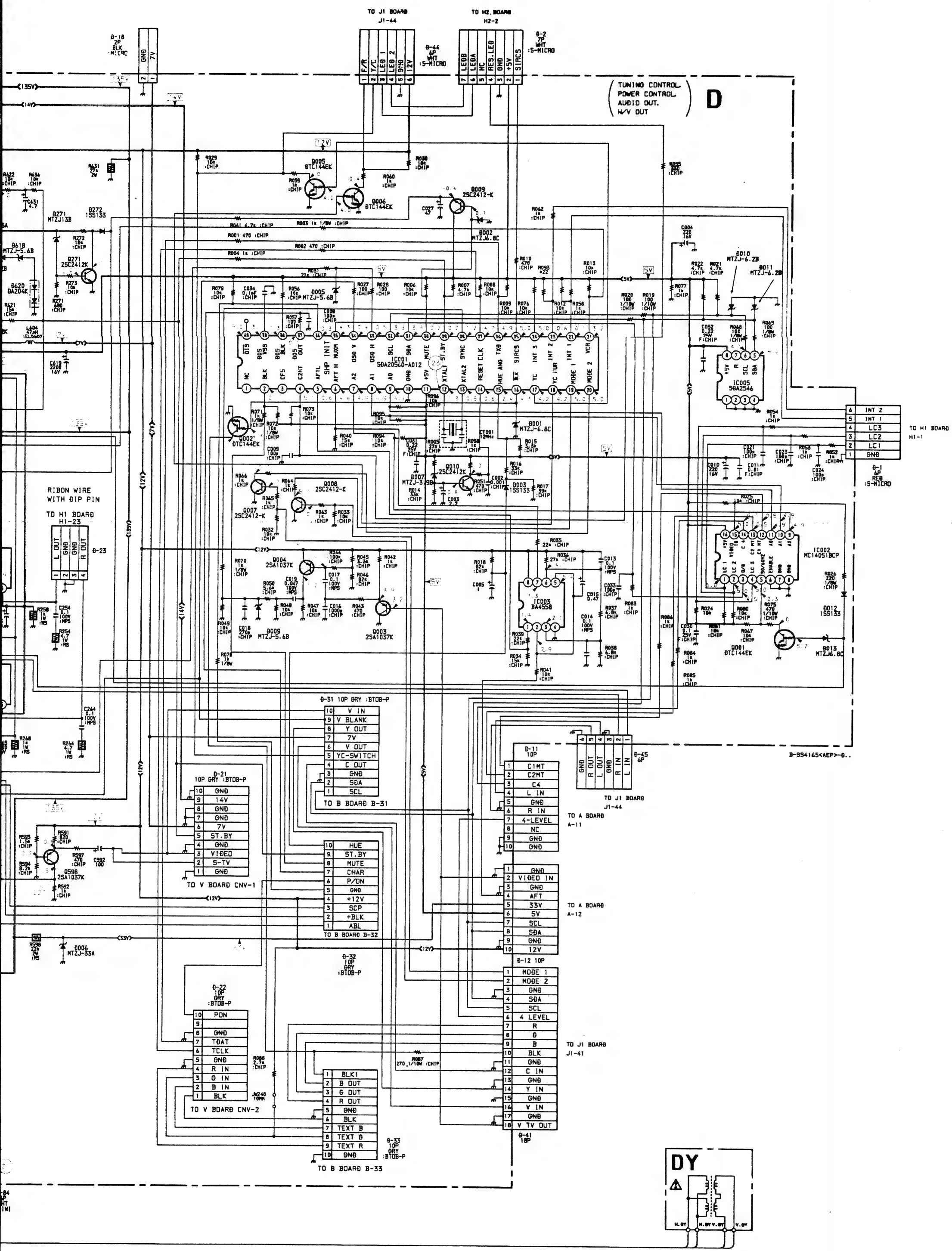
NOT MOUNTED

D001	PROTECT
D002	PROTECT
D003	HUE CTL
D005	PROTECT
D006	VC VOLTAGE REGULATION
D007	PLOT RESET
D008	CLIPPING SYNC LEVEL
D010	PROTECT
D011	PROTECT
D012	PROTECT
D013	PROTECT
D271	VOLTAGE DETECT
D272	DECOUPLING MUTE AUD
D501	START
D504	V PULSE OUT
D508	CANAL +BLK LEVEL
D509	V LIN
D511	PROTECT
D512	PROTECT
D513	PROTECT
D514	PROTECT
D515	PROTECT
D601	AC RECT
D602	REF RECT
D603	SMPS DRIVE 1
D604	SMPS DRIVE 2
D605	SMPS DRIVE 3
D606	+12V REC
D607	REF RECT
D608	PULSE CLIPPER
D609	FAST ON/OFF
D610	+14V RECT
D611	+135V RECT
D612	+7V RECT
D613	AF V RECT-1
D614	AF V RECT-2
D616	+12V REG
D617	PROTECT
D618	+12V REF
D619	FAST ON/OFF-2
D620	+12V REF
D621	FAST ON/OFF-3
D622	PROTECT
D623	DECOUPLING STBY
D624	DECOUPLING STBY
D630	+12V RECT
D801	+27V RECT
D802	+200V RECT
D803	G2 RECT
D804	H CENTER-1
D805	H CENTER-2
D806	H DAMPER-1
D807	H DAMPER-2
D808	PIN DAMPER

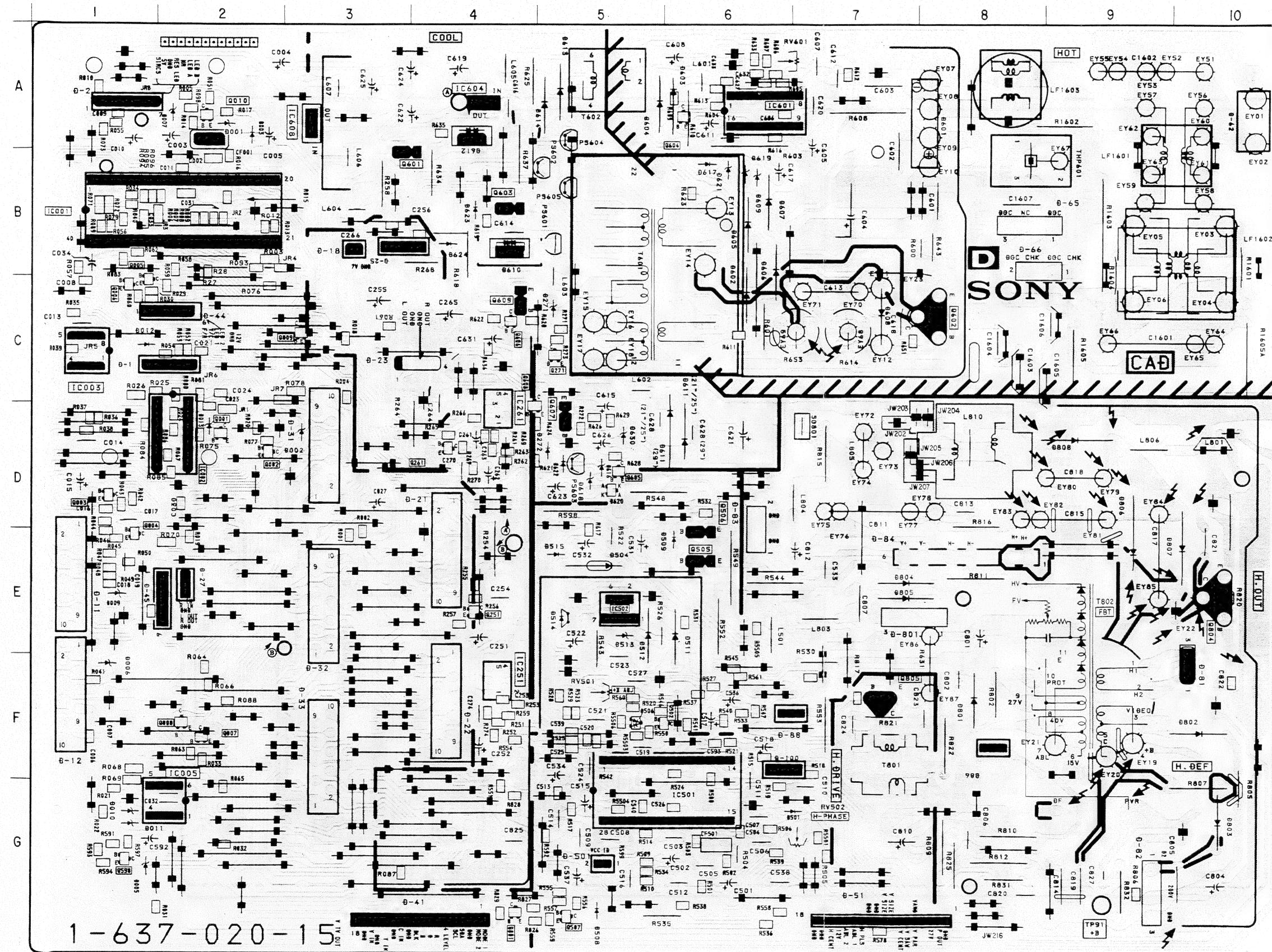












IC		D013	D-2
IC001	B-2	D271	C-5
IC002	D-2	D501	G-7
IC003	C-1	D504	E-5
IC005	G-2	D506	F-5
IC251	F-4	D508	H-5
IC261	D-4	D509	E-6
IC501	G-6	D511	E-6
IC502	E-5	D512	E-5
IC601	A-6	D513	E-5
IC604	A-4	D601	A-8
IC608	A-3	D602	C-6
TRANSISTOR		D603	A-6
Q001	D-2	D604	A-5
Q002	D-3	D605	B-6
Q003	D-1	D606	B-6
Q004	E-2	D607	B-6
Q005	C-1	D608	C-7
Q006	C-1	D609	B-6
Q007	F-2	D610	B-4
Q008	F-2	D611	D-6
Q009	C-3	D612	A-4
Q010	A-2	D613	A-5
Q251	E-4	D614	A-5
Q261	D-4	D616	D-5
Q271	C-5	D617	B-6
Q502	F-5	D618	D-5
Q505	E-6	D619	B-6
Q506	E-6	D620	D-5
Q507	H-5	D621	B-6
Q598	G-1	D622	D-5
Q601	B-3	D623	B-4
Q602	C-8	D624	B-4
Q603	B-4	D630	D-5
Q604	A-6	D801	F-8
Q605	D-5	D802	F-10
Q606	C-4	D803	G-10
Q607	D-5	D804	E-7
Q608	C-4	D805	E-7
Q609	C-4	D806	E-9
Q801	H-4	D807	E-10
Q804	E-10	D808	D-9
Q805	F-7		
DIODE		TP	
D003	A-2	TP91	J-9
D002	D-3		
D003	A-2		
D005	G-1		
D006	F-1		
D007	A-2		
D009	E-1		
D010	G-1		
D011	G-1		
D012	C-1		







B Board

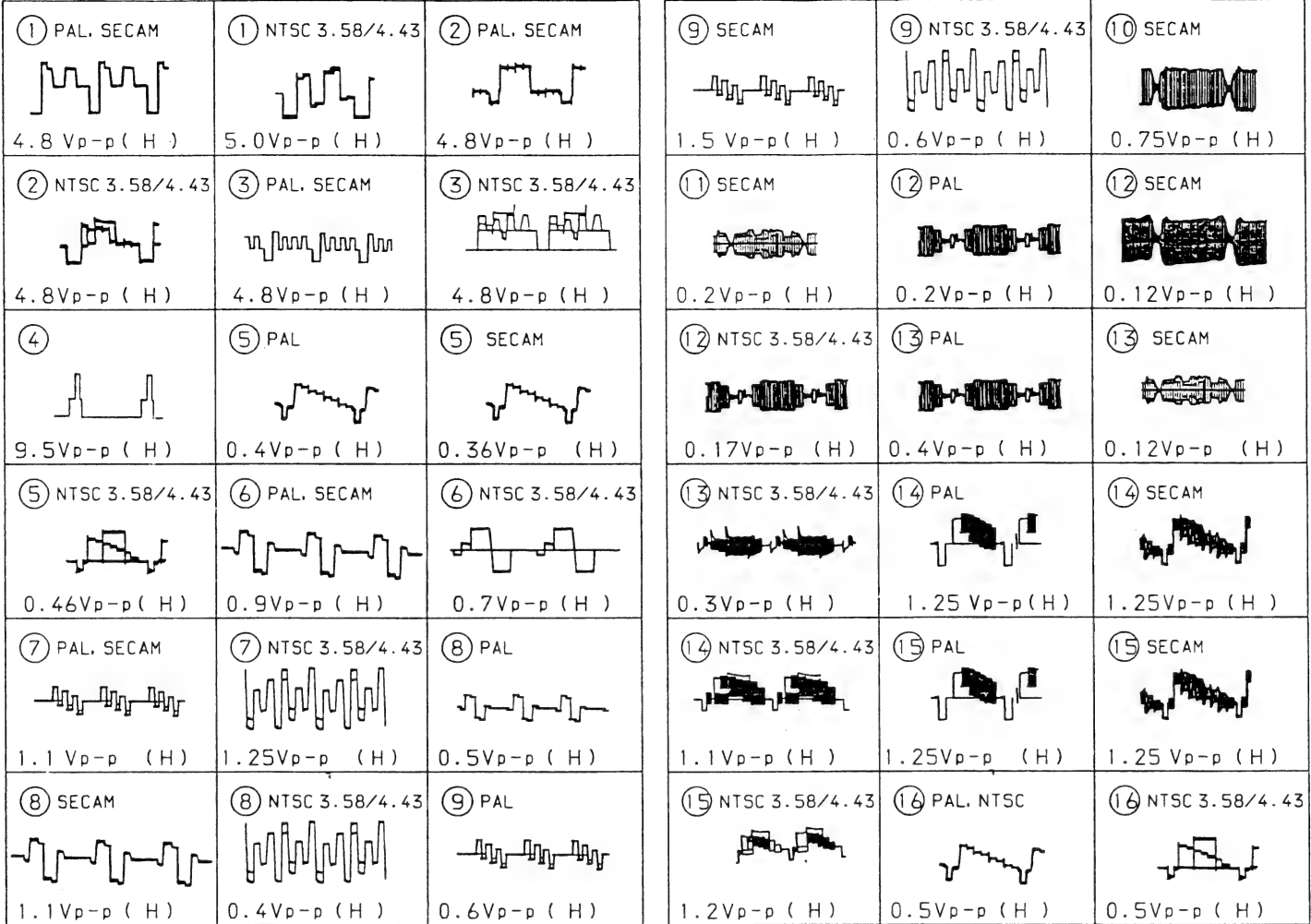
IC301	VIDEO PROCESSOR
IC302	D/A CONVERTER
IC303	Y/C COMP SWITCH
IC331	COLOR PROCESSOR
IC332	IH-DELAY
IC1301	SHARPNESS CONTROL (29 inch)
Q301	Y AMP (21,25 inch)
Q303	STBY SWITCH
Q305	ANTI PRIORITY SCART
Q306	VIDEO BUFFER (HUE)
Q311	ON SCREEN DISPLAY SWITCH
Q312	CANRL +BLK
Q313	ON SCREEN DISPLAY
Q316	FAS PICTURE MUTE SWITCH
Q330	VIDEO AMP
Q331	NTSC SWITCH
Q332	VIDEO BUFFER
Q333	Y AMP
Q334	PAL/NTSC SWITCH
Q335	SECAM SWITCH
Q381	MUTE
Q1301	Y BUFFER
Q1305	Y OUT (29 inch)
Q1306	Y OUT
D301	ACO AT STBY
D302	ACO AT STBY
D303	ACO AT STBY
D304	DECOUPLING BLK
D305	PROTECT
D307	PROTECT
D309	PROTECT
D310	PROTECT
D311	PROTECT
D312	PROTECT
D313	PROTECT
D314	PROTECT
D315	PROTECT
D316	PROTECT
D317	PROTECT
D318	PROTECT
D319	PROTECT
D320	PROTECT
D331	SECAM SWITCH
D332	SECAM SWITCH
D333	SECAM SWITCH
D350	PROTECT

B Board  
\* Mark List

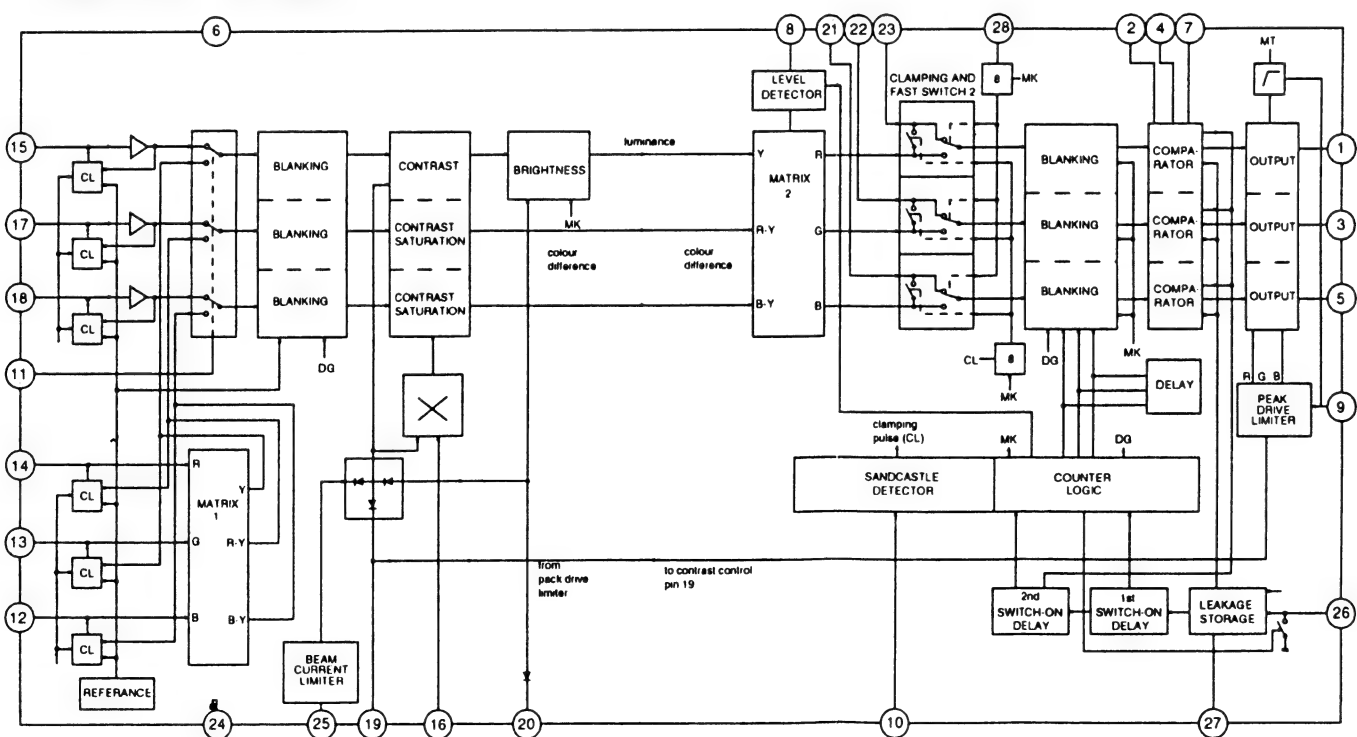
	21 inch	25 inch	29 inch
*1 C1311	56pF	56pF	33pF
*2 D350	MTZJ 5.6C	MTZJ 5.6B	MTZJ 5.6B
*3 R322	1K	1K	1.2K
*4 R377	330	330	1.8K
*5 R382	270K	220K	180K
*6 R390	220	220	100
*7 R1308	0	0	4.7K

		PAL	SECAM	NTSC3.58	NTSC4.43
IC301	(8)	0.1	0.1	5.8	0.1
	(26)	6.7	6.8	5.1	6.5
	(19)	3.1	3.6	3.1	2.8
	(21)	3.0	3.5	2.9	2.7
	(22)	5.6	5.6	7.1	7.2
	(23)	7.5	7.0	5.6	5.6
	(25)	0.1	0.1	0.1	5.8
	(26)	0.1	0.1	5.8	0.1
IC331	(27)	0.1	5.8	0.1	0.1
	(28)	5.9	0.1	0.1	0.1
	(B)	0.1	0.1	5.8	0.1
	(C)	0.3	0.4	0	0.8
	(B)	4.4	4.4	4.4	4.4
	(B)	4.9	0.1	4.8	4.8
	(B)	0.1	4.8	0.1	0.1
	(B)				

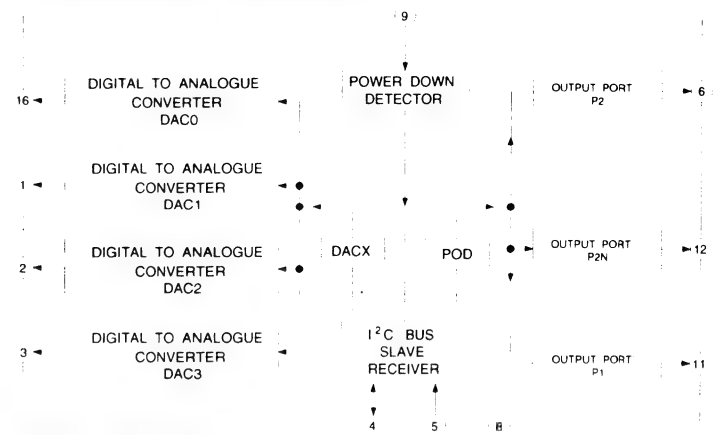
Waveform B Board



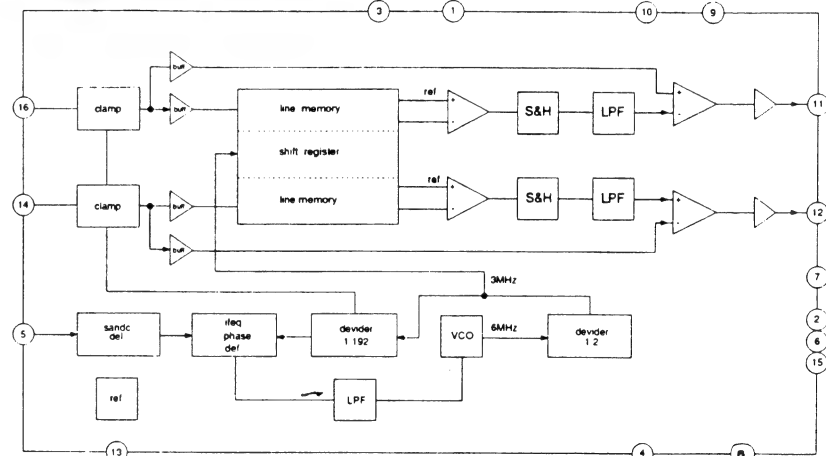
B Board IC301 TDA4580V7



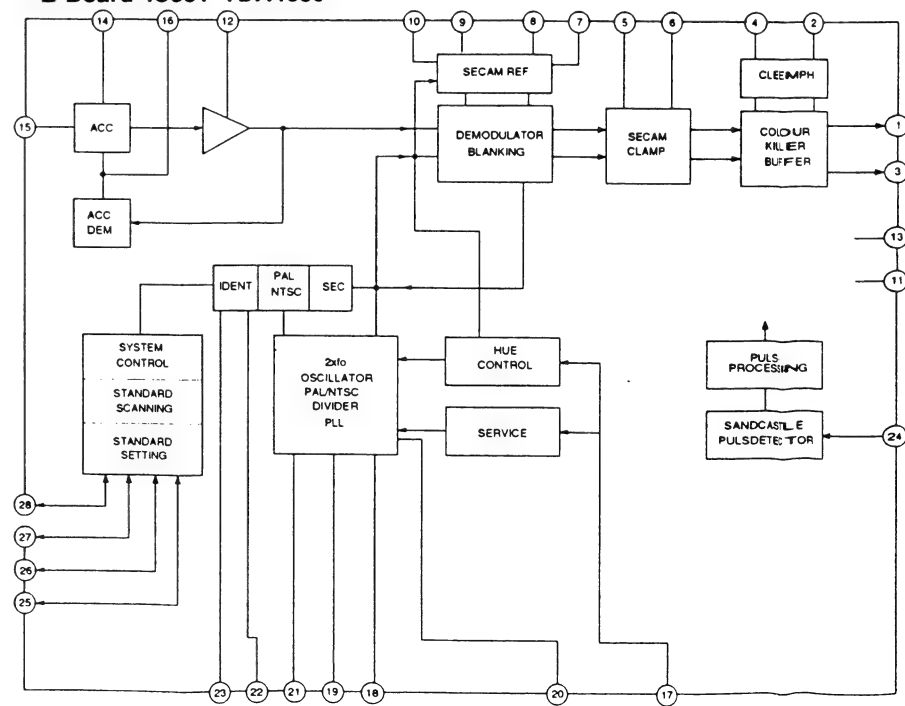
B Board IC302 TDA8442-N3



B Board IC332 TDA4660V2

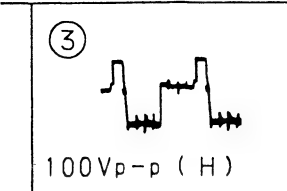


B Board IC331 TDA4650

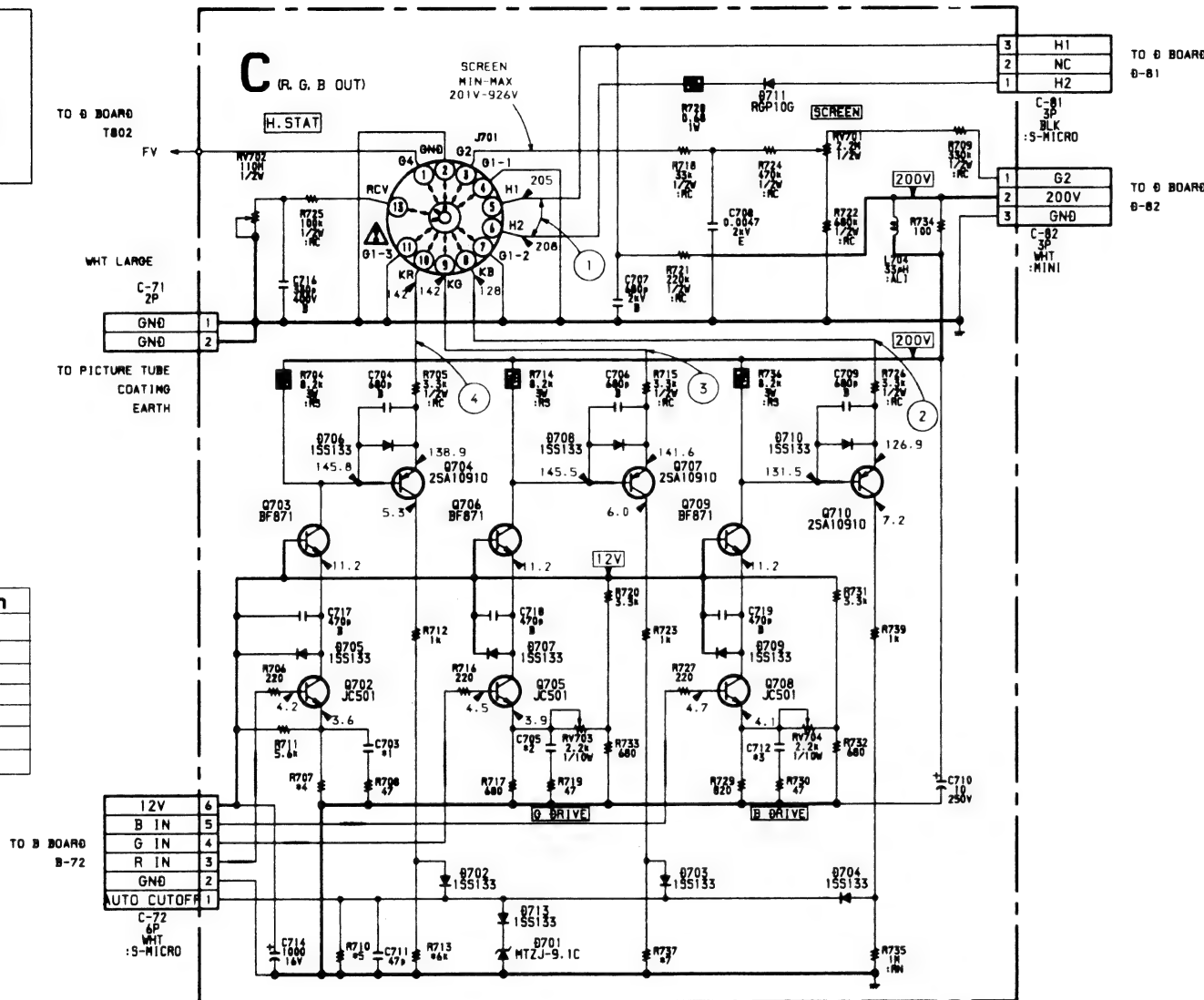




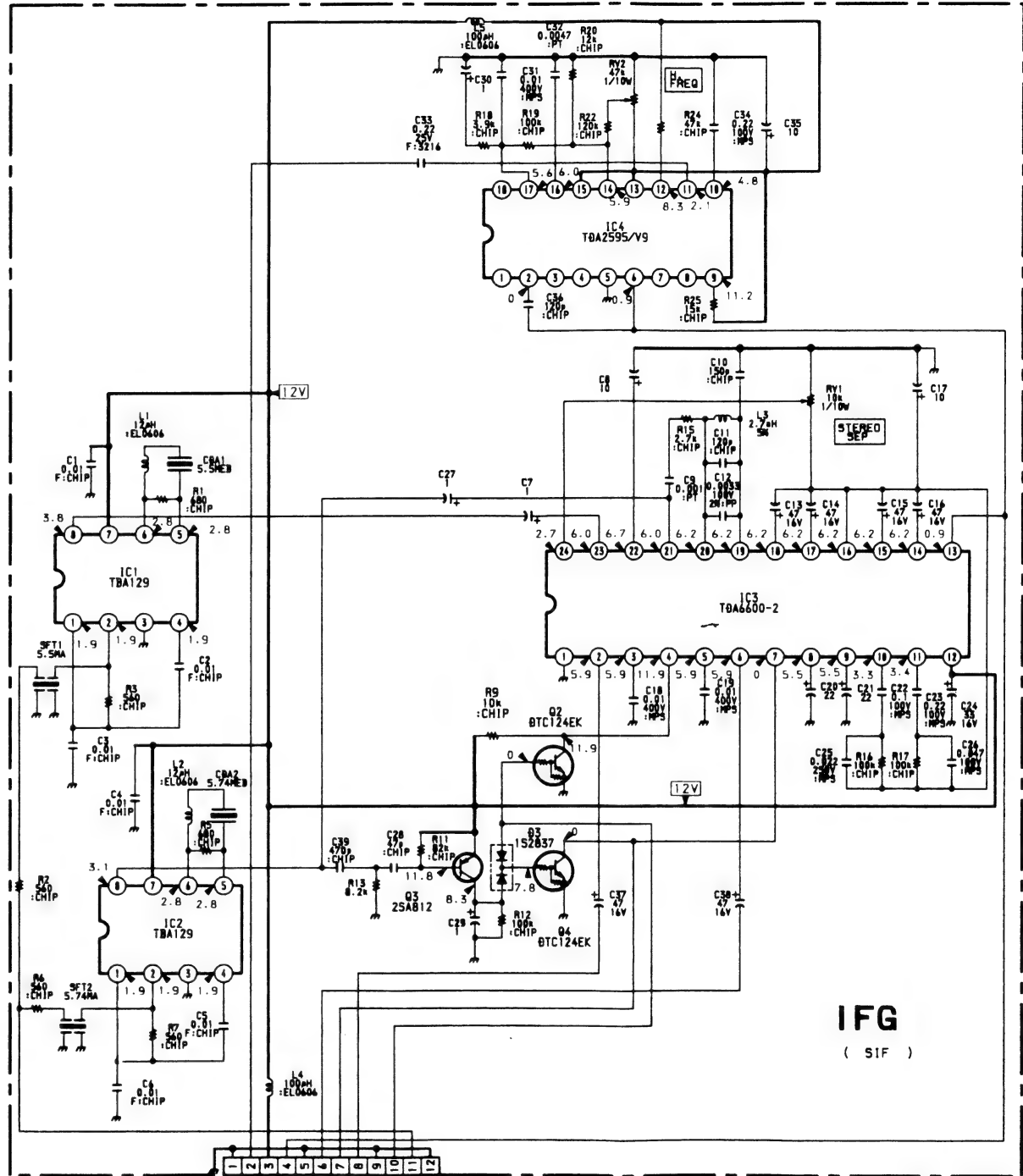




25 inch	29 inch
270pF	330pF
220pF	270pF
270pF	330pF
390	390
68K	68K
120K	120K
820K	470K

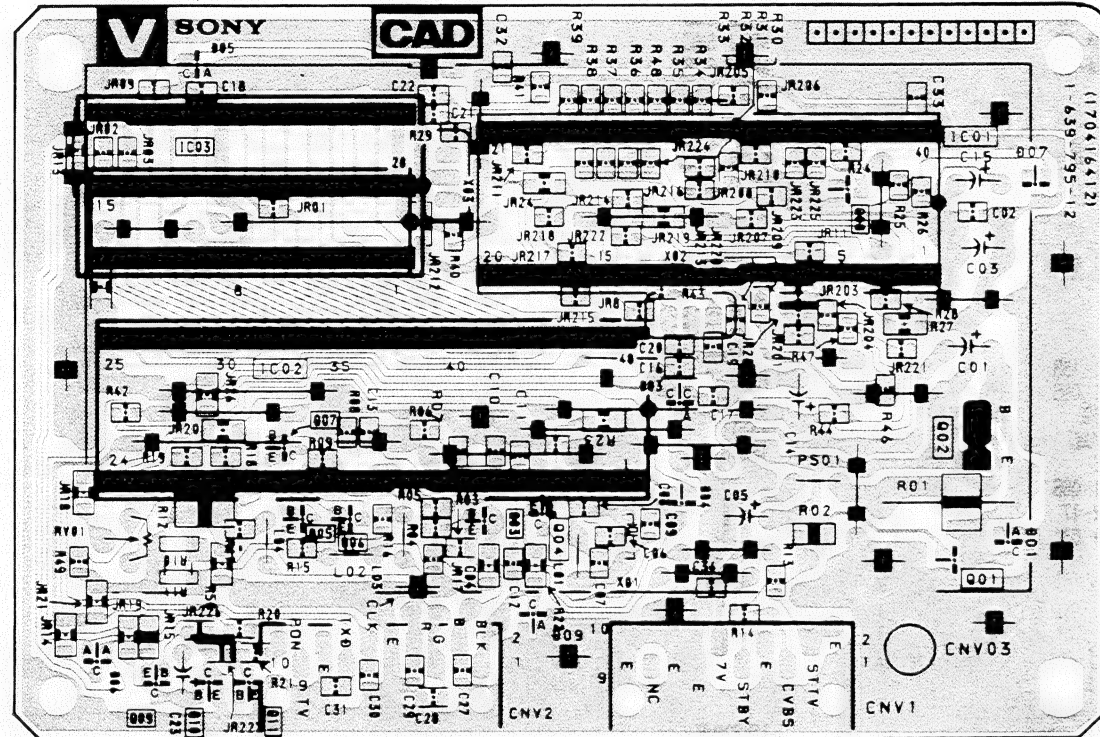


C Board	
Q702	R DRIVE
Q703	R OUT
Q704	ACO MEASURING
Q705	G DRIVE
Q706	G OUT
Q707	ACO MEASURING
Q708	B DRIVE
Q709	B OUT
Q710	ACO MEASURING
D701	PROTECT
D702	PROTECT
D703	PROTECT
D704	PROTECT
D705	PROTECT
D706	PROTECT
D707	PROTECT
D708	PROTECT
D709	PROTECT
D710	PROTECT
D711	HEATER VOLTAGE REC
D713	PROTECT

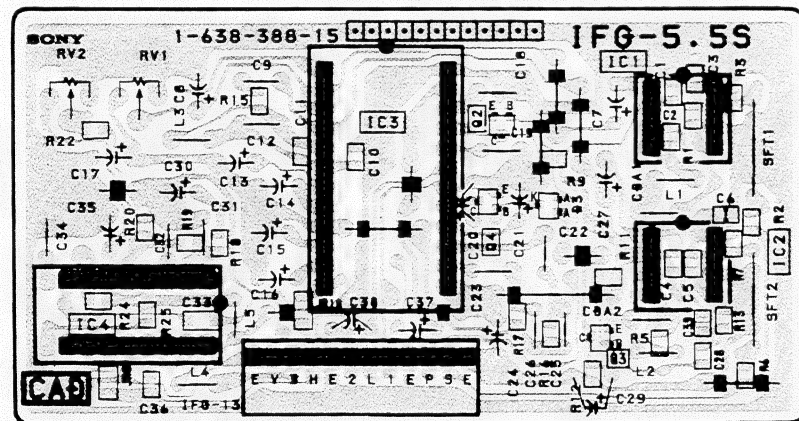


- IFG Board -	
IC1	5.5 DET
IC2	SIF DET AMP
IC3	H FREQ AMP
IC4	HORIZ COMBINATION
Q2	SW
Q3	SW
Q4	SW
Q5	SW

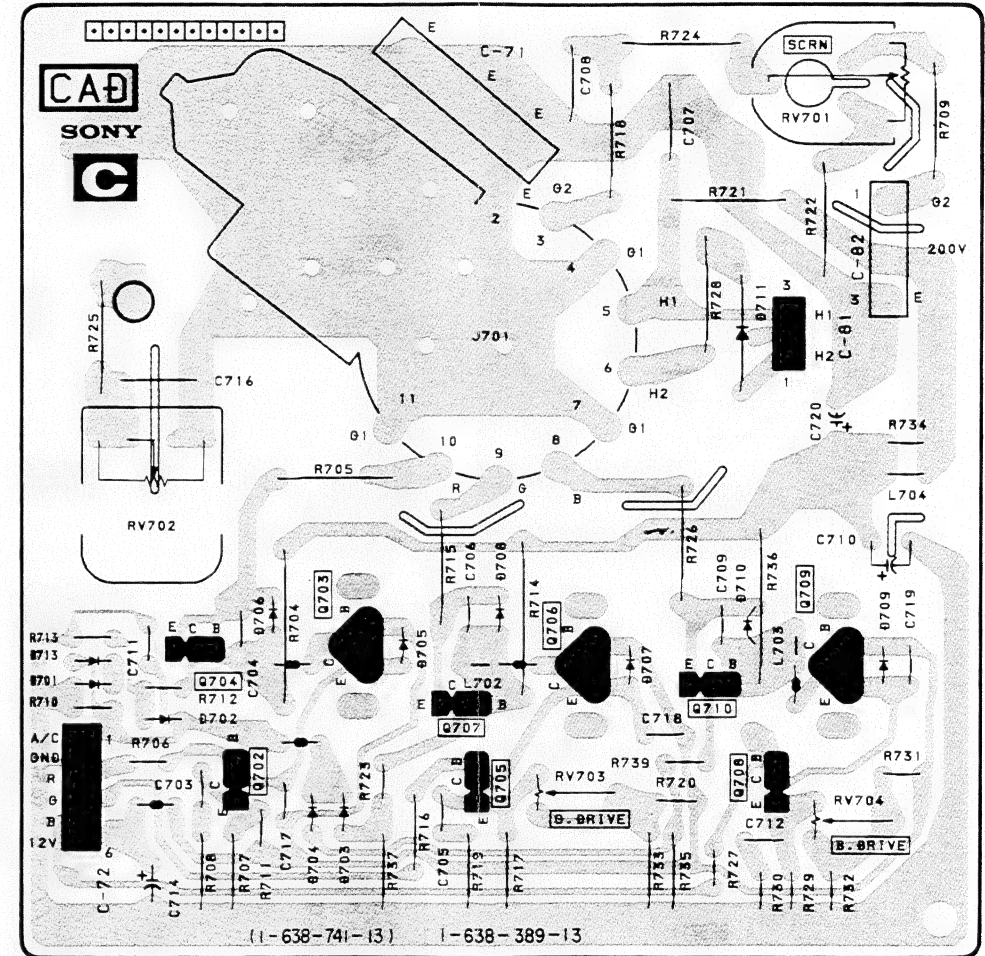
— V Board —



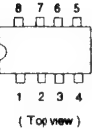
— IFG Board —



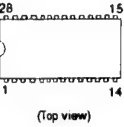
— C Board —



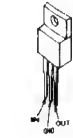
BA4558  
RC4558P  
TBA129  
TEA2014A  
TEA2031A



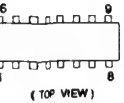
CXA1114P  
FCB61C65L - 70P  
TDA4580 - V7  
TDA4650 - V4  
TDA6200  
TEA2028B



MC7812CT  
TEA7605



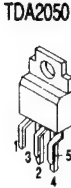
MC14051BCP  
MC14052BCP  
MC14053BCP  
PCF8574  
TDA4660V2  
TDA4442-N3  
TEA2260  
μPD4053BC



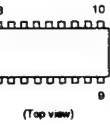
SBX1610 - 11



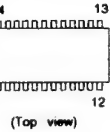
SDA20560-A012



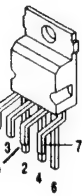
TDA2050



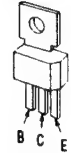
TDA2595-V9



TDA6600-2



BF871



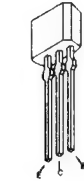
DTC144ES



DTA144EK  
DTC114EK  
DTC124EK  
DTC144EK  
2SA812  
2SA1037K  
2SA1162  
2SA1162 - G  
2SC1623 - L5L6  
2SC2412K - R



JC501  
2SC2785-HFE



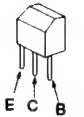
2SA1091-0  
2SD789-3  
2SD789-34



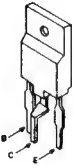
2SA1220A - P  
2SB1357 - EF  
2SC2688 - LK



2SB734 - 34  
2SD774 - 34



2SD1548



2SD2096 - EF



DAN202K  
MA152WK



DA204K  
1SS226



DAP202K



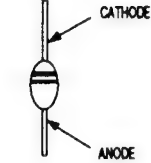
MA3036-H  
MA3056 - M  
MA3068 - M  
RD3.6M - B2  
RD5.6M - B2  
RD6.8M - B2



ERC06 - 15S  
ERC25 - 06S  
RGP10G  
RU - 3AM  
EL - 1Z  
ERD28 - 08S  
RGP02 - 17  
ERD29 - 08J



GP08D



MTZJ-11C  
MTZJ-12C  
MTZJ-4.7B  
MTZJ-5.6B  
MTZJ-5.6C  
MTZJ-6.2B  
MTZJ-6.8C  
MTZJ-7.5C  
MTZJ-9.1C  
MTZJ-15A  
MTZJ-3.9B  
MTZJ-33A  
MTZJ-36D  
RD11ES - B3  
RD12ES - B2  
RD5.6ES - B2  
RD6.8ES - B2  
RD7.5ES - B2  
RD9.1ES - B2  
UZ-4.7BSC  
1SS119  
1SS133



LD-201VR



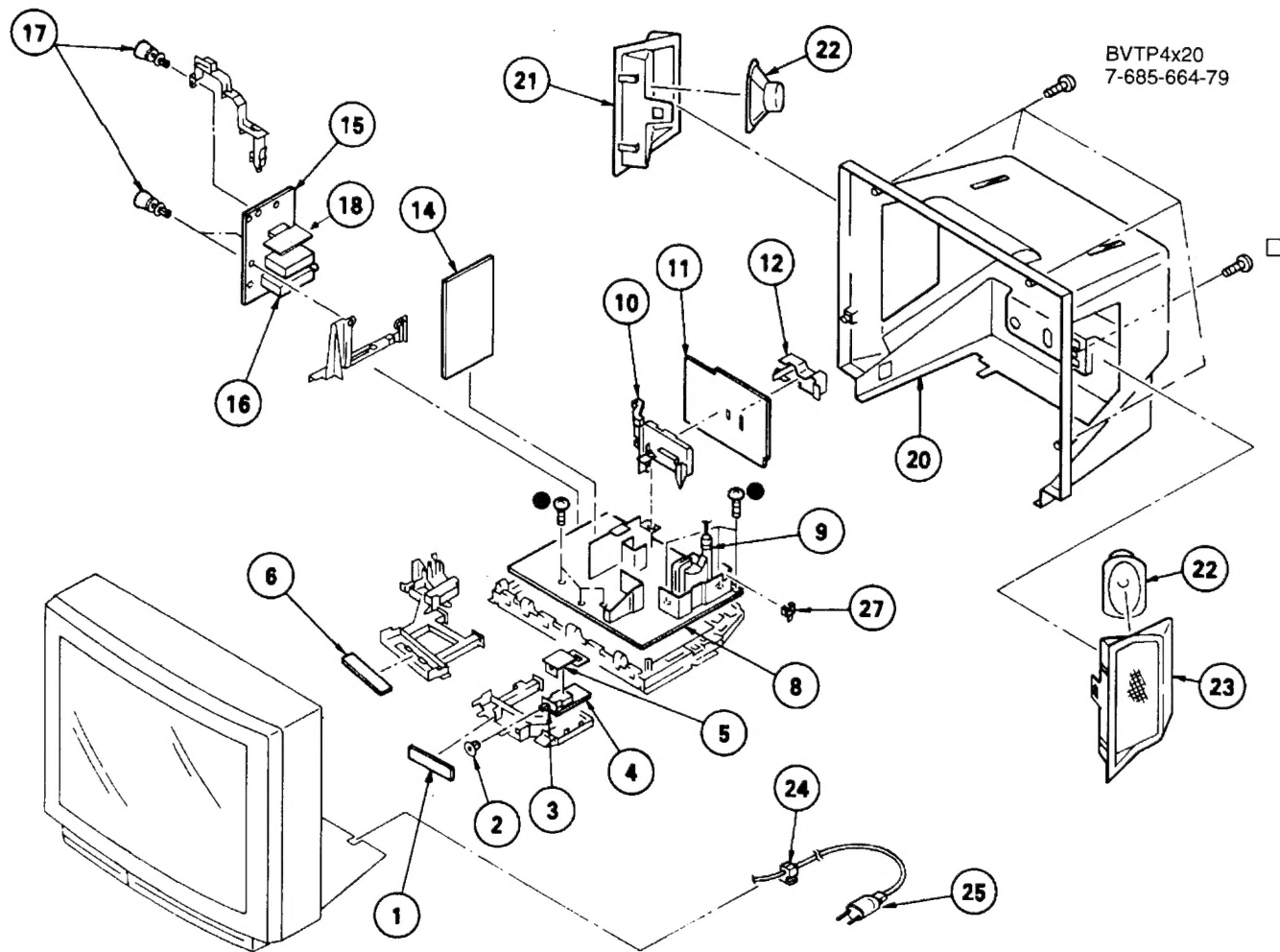


## CHASSIS

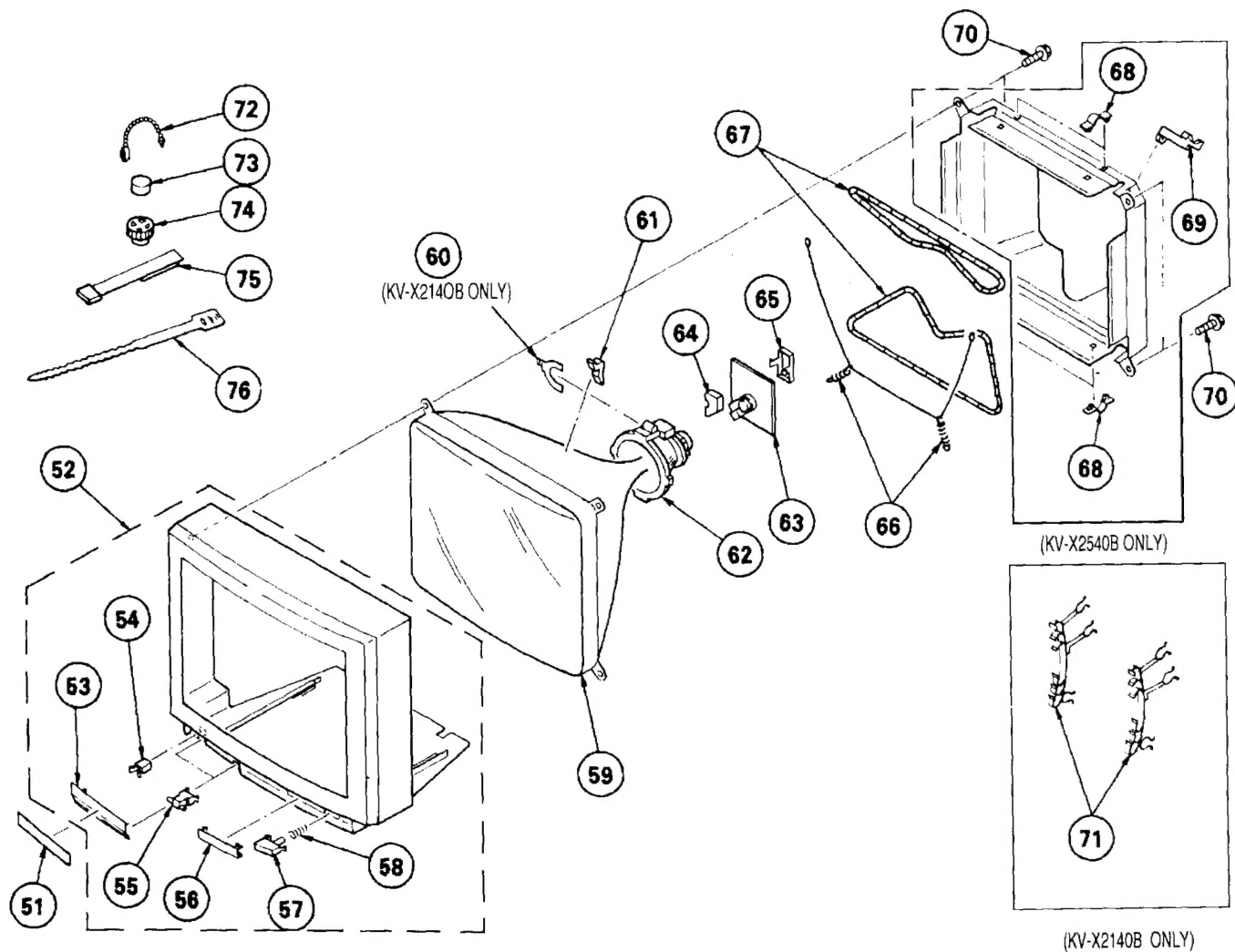
: BVTP3 x 12 7-685-648-79


: BVTP4 x 16 7-658-663-79

: BVYP4 x 20 7-658-664-79



## 6-2. PICTURE TUBE (KV-X2140B / KV-X2540B ONLY)



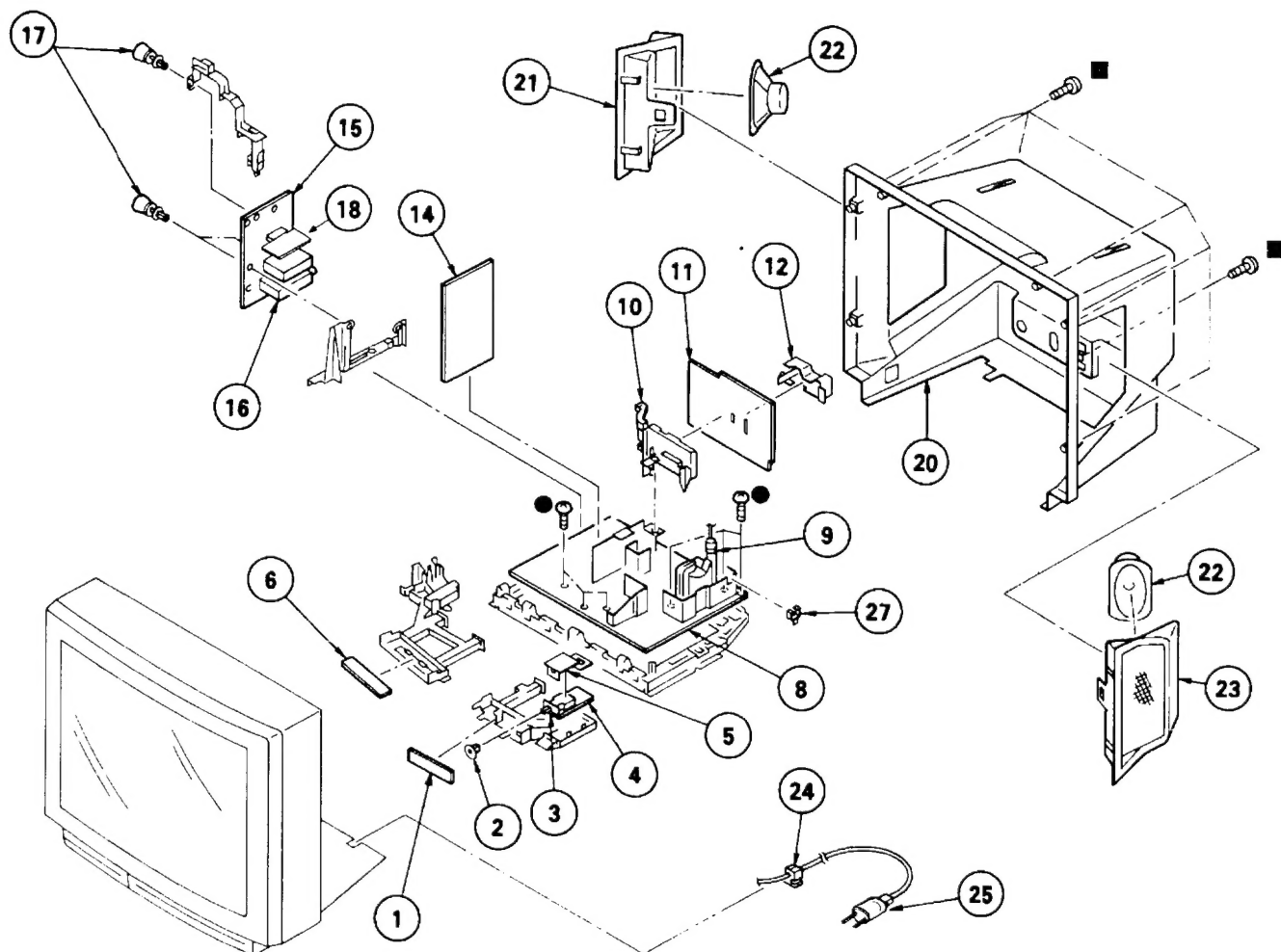
The components identified by shading and marked  are critical for safety.

Replace only with part number specified.

### 3. CHASSIS (KV-X2940B ONLY)

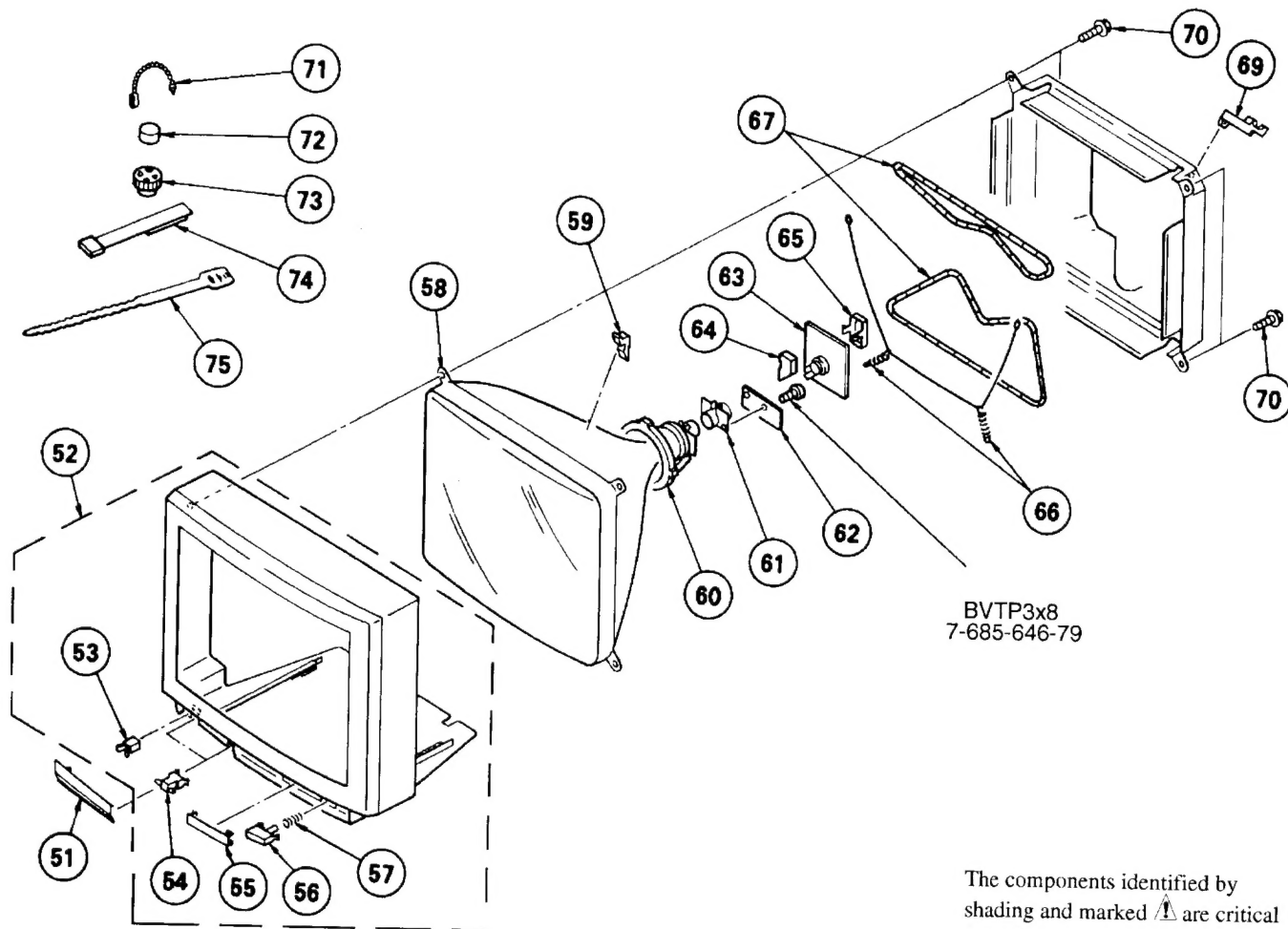
: BVTP3 x 12 7-685-648-79

: BVTP4 x 16 7-658-663-79




The components identified by shading and marked **A** are critical for safety.  
Replace only with part number specified.

# 6-4. PICTURE TUBE (KV-X2940B ONLY)



BVTP3x8  
7-685-646-79

The components identified by shading and marked  are critical for safety.

Replace only with part number specified.